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EDITORIAL

EVE Online is emerging as a society. This society, like any other society of humans, needs information in order to progress. And that is our job at the Research and Statistics group at CCP; to provide the EVE Universe with timely, accurate and interesting information about this phenomenal Universe we are all immersed in. This first issue of the Quarterly Economic Newsletter (QEN), with information and statistics about the EVE Online economy, is just one step of many which CCP is taking to make EVE the best online gaming experience.

The initial objective for developers of EVE was to make the universe as self-reliant as possible by giving players all the major elements needed to maximize the utility of their experience. Hence, an economic and social structure was created to support a large single world with potentially hundreds of thousands of inhabitants; and we are nearly there, estimating to have a universe population of more than 200,000 by the end of this year. A community this size is capable of being self-sufficient in providing the goods and services needed to survive the harsh environment in EVE Online.

As the population grows, the need for information increases as well. The Quarterly Economic Newsletter (QEN) is intended to help inform pilots in EVE about the status of the economy and to make it easier for others to understand the level of complexity in the EVE universe. In fact, with more than 200,000 players, the economic system of EVE is becoming so vast and complex that it is possible for the virtual world of EVE and the real world to learn from each other.

The QEN has three major subjects this time around. The first subject is demographics, in which we look at population, skill points and security status. The second subject is the macroeconomics of EVE Online, where we focus on the monetary supply. The third and final subject is price levels and measurement of inflation/deflation in the universe of EVE.

The main finding is that despite a rapid deflation over the past year, there is underlying inflationary pressure which needs to be addressed in the coming months. This inflationary pressure comes from increased purchasing power and increased money supply.

CCP was among the first companies in the world to offer a single-shard solution, placing it at the forefront of computer game technology. With this first Quarterly Economic Newsletter, CCP is once again a leader in gaming innovation by offering an unprecedented level of detailed universe information that players can use to enhance their online experience.

Enjoy!



DEMOGRAPHICS

How many live in EVE?

Eve is an emerging society inhabited by pilots that find their own niche in one of many available professions. Today there are more than 195,000 accounts, which represents 433,000 characters, or 2.2 characters per account. It is estimated that the population of EVE will have reached 200,000 by mid-Q4 2007 and will be well into 210,000 by Q1 2008. In addition to these accounts, there are another 45,000 trial accounts that could potentially become part of the society in the near future.

Of these 433,000 characters, there are 164,000 Caldari pilots (38%), 116,000 Gallente pilots (27%), 86,000 Minmatar pilots (20%), and 68,000 Amarr pilots (16%). In terms of gender, there are 40% female characters and 60% male characters in EVE. Each of the four races has its own history, background and attributes. The Caldari are the fighters and ruthless capitalists, their Empire composed of mega-corporations whose dicatorial powers are held in check more as much by customs as laws. The Gallente, on the other hand, are democratic and known for their trade skills, though the relentless application of those qualities and the unabashed hedonism that often results sometimes makes the Gallente a contentious presence in New Eden. The Minmatar are the freedom fighters, at once independent and individualistic but nonetheless united in their struggle for freedom and liberty, a struggle that makes them natural allies with the Gallente and sometimes leads them to the darker side of commerce and profit. Lastly there are the Amarr, an ecclesiastical race that composes the largest of the four empires and whose stratified society, while vast in riches and devoted to victory, is sometimes seen by outsiders as a lumbering bureaucratic giant. Every empire has its pros and cons, and the complex relationships between the four of them make for a variety of options that may well influence which empire the pilots choose to embody.

What about training and security status?

Characters acquire abilities over time through the skills system, usually choosing a skill path that either specializes in a single profession or taking the longer route of becoming a jack of all trades. There are 358 skills that can be trained in 15 different categories. Different character attributes also affect the efficiency of training each of these skills. The histogram on right shows the distribution of total skill points across the population of EVE. The average life span of an EVE character is seven months; hence it comes as no surprise that half of the characters have less than one million skill points. Another 25% of all characters have between one and ten million skill points, and the last 25% have more than ten million skill points. There are 191 characters that have more

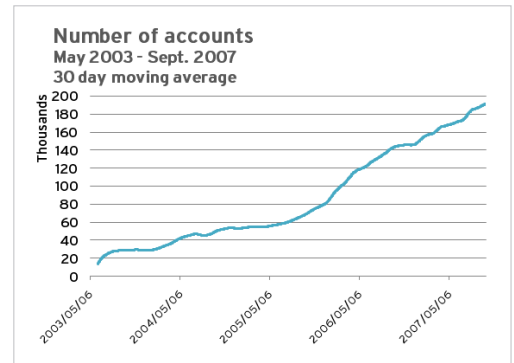


Figure 1: Total number of accounts from May 2003 through September 2007. The line shows 30 day moving average with population closing on the 200,000 account benchmark.

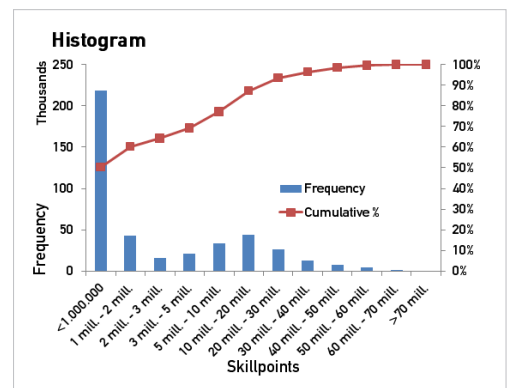


Figure 2: Distribution of skill points. Majority of characters have less than 1 million skill points. Only 191 characters have more than 70 million skill points.

than 70 million skill points, and of those only four have 80 million skill points or more. The character with the highest number of skill points is just shy of 91 million; a loyal pilot that has been with EVE since the game began in May 2003.

Skill points can be used to gauge if a character is new to the EVE universe or a hardened veteran. It takes about a month to train one million skill points so it is fair to say that anyone who has more than five million skill points is at least not a “newbie” anymore. The average number of skill points for all races is 8.7 million, with Caldari and Gallente being higher than Amarr and Minmatar. The interesting part is that the skills are distributed quite evenly among the races except when it comes to weapon skills. Of the average 8.7 million skillpoints, about two million come from spaceship command and navigation. This is almost exactly the same for all races. But when looking at gunnery skills, we can see that the average Amarr and Minmatar pilots have considerably higher points than Caldari and Gallente. This is directly related to the weapon options available on ships from each race. The Caldari pilots have considerably higher than average missile launcher operation points than Amarr, Gallente and Minmatar. Another interesting observation is that Amarr pilots have on average considerably higher missile launcher skill points than both Gallente and Minmatar, or 750,000 compared to 497,000 and 478,000 respectively. At the same time, 7% of total Amarr skillpoints are for drone operation, versus 9% or 10% for the other races. Amarr pilots therefore rely more on missile operations than drones as a secondary weapon.

Security status with CONCORD determines whether or not you can access high-security areas of space in EVE. A pilot who hunts down other pilots in these systems will lose favorable status with CONCORD. On the other hand, a player who hunts down non-player characters (NPC’s) in asteroid belts or runs missions for agents increases his security status with CONCORD. Hence, security status gives a hint about pilot preferences. Examining the security standings of pilots reveals that most pilots have a standing greater than 0. Only a fraction of players from each faction have negative standings. In total there are 32,000 pilots with negative standings, but most of those have a standing between 0 and -0.1. So when do you count as a pirate? It is difficult to infer that from security data alone, but to have a security status of -3 or lower actually requires considerable effort on behalf of the pilot. Hence it is possible to say that anyone at that level or lower counts as a pirate. There are 4,200 pilots with a standing of -3 or worse, and only 32 pilots that have reached the perfect criminal score of -10. On the other end, the pilot with the highest security rating has an 8.5, and only five pilots have a security rating of 7.0 or higher.

So where are they, and which ships are they flying?

Now that we know the factions that characters belong to, it is interesting to see where pilots are located and what they are flying.

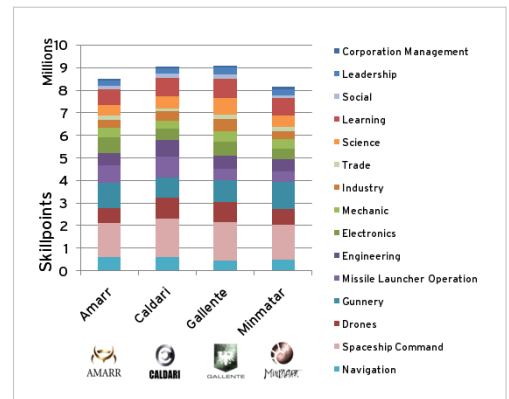


Figure 3: Average skill points per character and race and share of each skill category. The share of each skill within each race is similar except for weapon skills where the difference is based on the bonuses each race receives for a particular weapon.

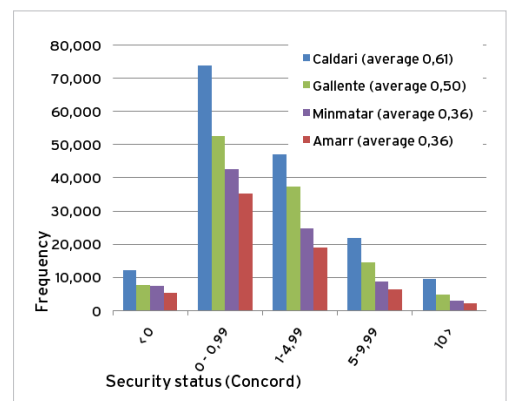
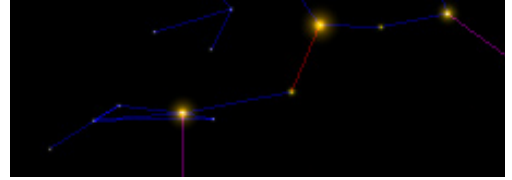


Figure 4: Pilot security status by race (CONCORD). Majority of pilots has status between 0 and 5. The distribution among races is similar when looking at the share of each security group.

Older game mechanics allowed pilots to achieve security standing of up to +10. However, current game mechanics only allow pilot to reach security standing of +5.

Those pilots that had received higher standing than 5 kept their standing but are not able to increase it, even though they lose part of that standing. Hence, all pilots with standing higher than +5 today are older pilots.



A snapshot of the status on October 19th, 2007 was used to find out which ship players happen to be in at downtime. We found that 78% of all characters were located in high security areas (security status at 0.5 or higher), 13% were located in low security areas, and 9% were in 0.0 at the time the snapshot was taken. So, the majority were flying in high sec. But what were they flying then?

The Raven holds top place with 10,722 pilots flying that ship, followed by the Drake, Kestrel and Rifter. This is consistent with findings from the [Economic Dev Blog No. 2](#), which revealed that the Raven was the most produced (and lost) vessel in EVE.

It is interesting to note that the top four ships are fighting vessels, the fifth one is a mining vessel (Hulk), but vessels in sixth through eighth place are all industrial vessels. This could be interpreted as an indicator about the relative importance of the mining, industry/trading, and mission running professions. If that is the case, then the interesting observation is how many are in non-fighting professions. However, note that this is a single snapshot which we cannot draw any strong conclusions from. But this is a statistic that will be watched closely in the future.

Spaceship name	No. of ships
Raven	10,722
Drake	9,156
Kestrel	8,856
Rifter	6,738
Hulk	5,854
Itron Mark V	5,041
Bestower	4,997
Badger Mark II	4,853
Caracal	4,831
Merlin	4,591
Other	172,410
Rookie ships and capsules	151,054
Shuttles	44,644
Total ships	433,747

Table 1: Spaceship that pilots were flying just before downtime. Raven is in the top seat followed closely by the Drake. Of the top 10 vessels six are fighting vessels and four are mining/industrial vessels

MACROECONOMICS OF EVE ONLINE

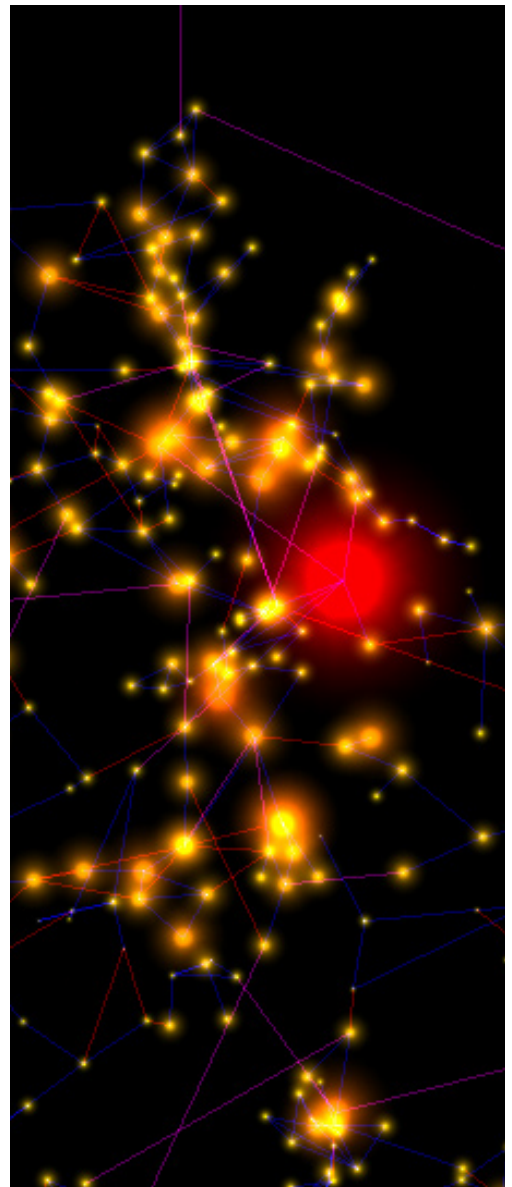
In economics, there is a distinction made between microeconomic and macroeconomic analysis. Microeconomics examines the behavior of firms and consumers, while macroeconomics concerns the entire system of interactions between firms and consumers.

EVE Online is emerging to become a true economic system which is self-sufficient in providing the goods and services required for its own universe, which has several categories of pilots and thousands of items. The fact that EVE Online is a single universe in which all pilots can trade and share items directly with each other makes it one of the most complex virtual economic systems today.

EVE Online operates on a different time scale than real life. No formal studies have been conducted on the measurement of time across "fiscal" periods in EVE, but judging from forum-based discussion, markers such dividend payout frequency and other variables suggest that one year in real life is equivalent to one month in EVE. Hence, most of the analysis done on the economic system of EVE uses months, weeks and days as the basic time units to report on growth. This does not in any way affect the results from these studies, but simply changes the scale of the reporting numbers.

The macroeconomic system of EVE Online

A Macroeconomics 101 course usually begins by showing a graphic representation of a macroeconomic system in which key enablers



and streams are identified. The graph will also show the stream of goods and services floating between these key enablers and a reversal stream which shows the flow of currency as payments for these goods and services. The economic system of EVE Online has been described as a “sink and faucet” system where currency trickles into the system through various sources and then leaks out again through several sinks. Both the source and the sinks are created by CCP, the operator of EVE Online. In Figure 5 to the right, the standard economic model of a macroeconomic system and the sink/faucet description of a virtual economy are combined in order to show a descriptive figure of economic transactions within EVE Online.

The orange square represents EVE as a whole. Within this square box we define two sets of agents; industrialist (Box A) and all other pilots (Box B). This is, of course, a rough description of the true system, since pilots within EVE take on many different roles - and in many cases the same pilot may have more than one role. For the purpose of clarity, we have decided to stick to this classification for now.

Pilots (Box B) earn their income from two major sources: by providing services to Non-Player Characters or Corporations (NPC’s) and by trading on the market. Services provided to NPC’s are the faucets of the virtual economic system and pump new ISK into the EVE universe. These services include bounties for NPC hunting, mission rewards, mission bonuses, and net insurance payments. These are all represented by Box C. Payments for various services to NPC’s are represented by Box D and include all kinds of fees, taxes, rentals (from NPC stations), skills (from NPC’s) and other service fees.

Market transactions between players are represented by the ellipse in the figure. Trade between players does not add new ISK into the system, but increases overall value which is represented by increases in the velocity of ISK. Net profit from trade with NPC corporations does add ISK into the overall system and is therefore grouped with the faucets in Box C.

Industrialists need blueprints, minerals, components, and production facilities to manufacture items such as starships, modules, and ammunition. Industrialists can either do their own mining, or they can purchase minerals from the market and thus add to the overall value of the economy through that market or mining activity. These actions are therefore grouped with the overall market transactions. On the other hand, blueprints are bought from NPC’s, at least initially. Hence, blueprints function as sinks and are included in Box D.

There is currently about 90 trillion ISK in the EVE universe. This would be equal to the definition of M1 in standard economic terminology, i.e. currency readily available for transactions. Note that this only measures the amount of currency which can be used

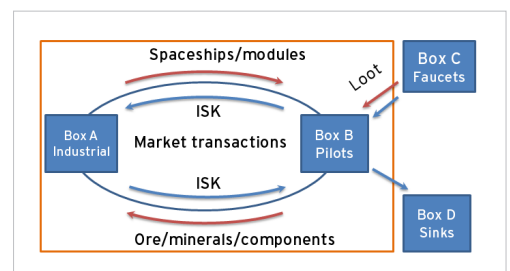


Figure 5: The macroeconomic system of EVE. The figure shows the flow of items and ISK between industrialists and pilots. It also shows how loot and ISK flows in and out through the faucets and sinks system.



for transactions. The total amount of ISK does NOT reflect the total value of everything in EVE; that value is considerably higher than the 90 trillion ISK in the system. Of this 90 trillion, about 65 trillion are in the hands of active characters, 10 trillion is in corporate accounts and 15 trillion is in accounts that have been defined as inactive, but could potentially be activated at any time.

Pilots need ISK in order to purchase starships and fit them with any combination of the vast numbers and varieties of available ship modules. They earn that ISK through missions, hunting and trading, all of which add to the overall value of the EVE economy. Hence, when the population of EVE grows, so does the amount of ISK in the system. As pilots work longer hours mining that extra asteroid belt, or running after some NPC's, they also add value to the system by acquiring new items and/or collecting bounty ISK. Figure 6 on the right is the same as Figure 5 above, except it has been marked with daily transaction amounts. In the third quarter the daily market transactions averaged to 2.1 trillion in more than 700,000 transactions. During the period there has been low but stable growth in the number and amounts of daily market transactions, which indicates that the EVE economy is growing. Similarly, about 536 billion is added through various pilot activities (faucets), but 365 billion leaks out again, thus adding an average net number of 171 billion per day, or 394,000 ISK per character each day. This amount grew from 130 billion per day in July to a max of 212 billion per day during the first week of September, and then leveled off at just under 200 billion ISK in the last week of September. Since the population is growing at the same time, it is necessary to look at the growth per subscriber in order to draw any conclusions from these numbers.

The next figure shows us how the total volume of ISK has grown over the past twelve months, both in nominal terms as well as in proportion to population size. The blue line shows how the total ISK grew from 75 trillion at the end of June 2007 to just over 90 trillion at the end of the third quarter. The red line shows the growth of the money supply over the time period, and the green line shows the population growth at the same time, measured in number of active subscribers. As evident from the graph, the money supply grew faster than the population from the second week of July through the entire 3rd quarter. During this time period, total logon minutes were relatively stable at around 29 to 30 million per week. At the same time, the average amount of ISK associated with individual accounts increased from 427 million to 474 million ISK, or from 195 million per character to 215 million ISK per character.

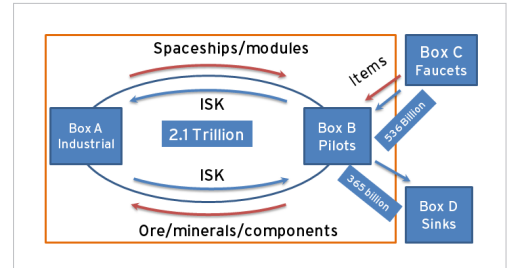


Figure 6: The macroeconomic system of EVE and daily transactions of ISK. Daily market trade amounts to 2.1 trillion ISK; gross faucets are 536 billion and gross sinks are 365 billion daily. Average number for the third quarter of 2007

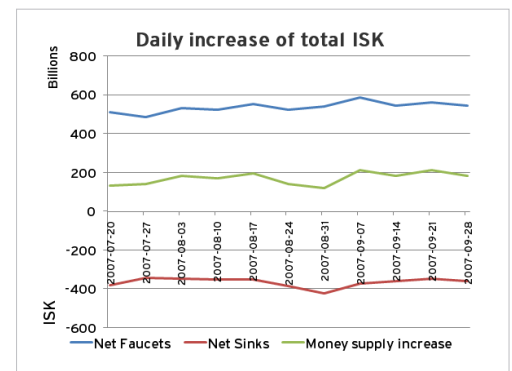


Figure 7: Net faucets for ISK into EVE. Daily average net addition of ISK into EVE increases from 130 billion ISK to 200 billion ISK by the end of the third quarter.

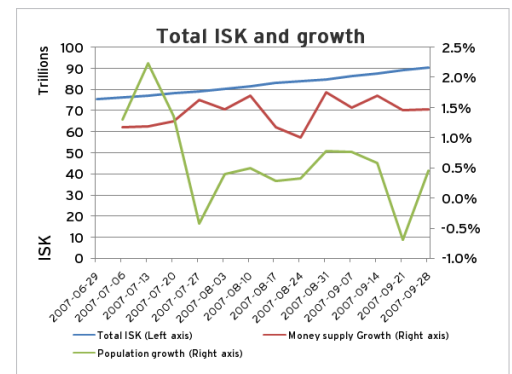


Figure 8: Total ISK and growth compared to population growth. Total money supply is increasing faster than total population.

Figure 9 also shows the distribution of ISK in pilot wallets. Of the total ISK in EVE, about 60% have 100 million or less, while 40% have more than 100 million ISK on their account.

Drawing from this information, it is apparent that total ISK in the EVE universe is increasing, and is doing so faster than the population. From a monetary standpoint, a money supply that increases faster than total production indicates inflation. In order to measure inflation in those terms, we would need to have the value of total production in EVE, or “gross domestic production (GDP)” as it is known in economic terms. At this point the measurement of GDP is not available, but indications from market transactions, production of starships (see [Econ Dev Blog no. 2](#)) and increases in cash holdings all point to the fact that the overall economy is growing. We conclude that given the increased amount of ISK in the system, there is potential for rapid price increases, especially if future production growth is incapable of matching rapid increases in aggregate demand.

PRICE LEVELS

Inflation is measured as the change in price levels. Usually, a representative basket of goods is selected based on surveys of which goods and services consumers or producers have used in the past. Since EVE is a digitized universe, it is possible to know in detail what items are being bought and sold at any given time. This makes it possible to construct price indices which accurately measure the overall change in price.

In order to measure price levels in EVE, we constructed four main price indices: a mineral price index, a primary production price index, a secondary production price index, and a consumption price index. There are two methods used to measure the price change. One is the “fixed basket” approach, which uses a basket based on consumption for the last 180 days. The other is the “chain” approach, in which the basket is updated every month. The reason for using these two methods is to demonstrate the impact that changes in pilot preferences have on price indices, and why one method will be preferred over the other in the future.

Mineral prices

The mineral price index measures price changes in all eight minerals across all 66 regions, thus showing the general trend in prices for minerals in EVE. Minerals are needed to produce almost everything, and so it is expected that price changes in minerals would indicate what the price change will be further down the value chain. The graph below shows the price change in minerals from October 2006 through September 2007.

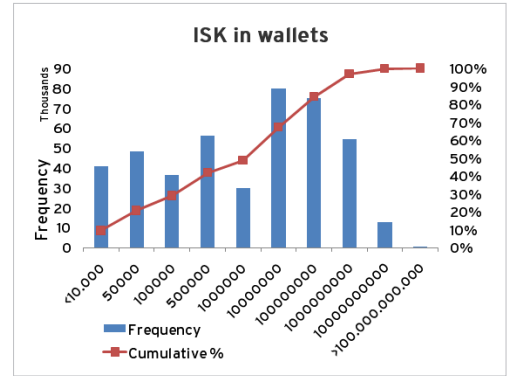


Figure 9: Distribution of total ISK in account wallets.



The difference between the chained index and the fixed index is small due to the fact that the relative quantity of mineral use is stable over the time period (for more detailed data and discussion on the mineral market see [Economic Dev Blog No. 1](#)).

The red line in Figure 10 shows the fixed basket mineral price index, the blue line shows the chained index, and the green one shows the monthly change in the price index (right axis). The monthly price change shows that overall there has been deflation on the mineral market, with the exceptions of the fourth quarter in 2006 and June 2007. In both of these cases, the publication of new releases (Revelations I and Revelations II) increased the demand for minerals. The monthly price increase in November 2006 was 0.9%, but the increase in December 2006 was 4.4%, which shows well how the release of Revelations I, with new starships to build, increased demand for minerals. However, beginning in Q1 2007 and extending through Q2, the price declined, with an overall price reduction of 15%. The exception is June, when the index increased by 3.9%. This happened at the same time as the release of Revelations II, demonstrating how new releases affect the mineral market. This is something that all pilots should keep in mind now that the release of Trinity is imminent. The third quarter numbers show stabilization in the price index, though the index continued to decline by just over 1% per month. This indicates that the mineral market is stabilizing.

Prices for minerals are expected to increase during the fourth quarter. There are two reasons for this: the reduced supply of tritanium available through refining modules, and an increase in demand as pilots prepare their manufacturing facilities for the construction of new ships with the release of Trinity on November 27th, 2007. Due to changes in the mineral composition of coupling arrays, prices of tritanium have increased by more than 50% well into the fourth quarter of 2007. Prices seem to have stabilized at around 3.2 - 3.5 ISK per unit, depending on the region. But they are expected to increase again in the last two months of this year, especially if the advice from [Econ Dev Blog no. 2](#) on changes in shuttle prices will be implemented.

Primary production

The primary production index contains all the items that are needed for production at the primary stage, including ore, moon material, ice etc., but excluding basic minerals. The products from primary production are used for Tech I and Tech II production. In total, there are 284 items in the fixed basket index, but about 200 items per month for the chained index.

Overall, the price decreases by more than 80% when measured by the fixed basket index. Of the 284 items in the fixed basket, 104 increased in price, but 170 decreased in price over the time period. Ten items had the same price at the end of the period as

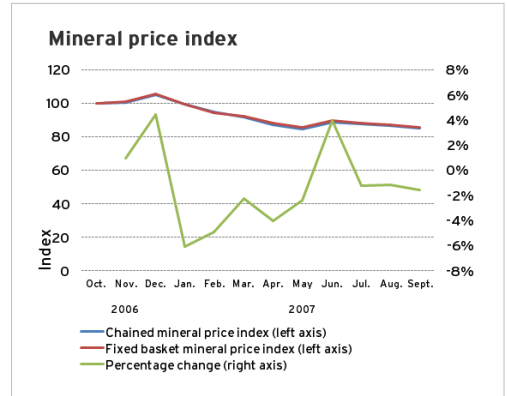


Figure 10: The mineral price index showing the chained and fixed basket index. The graph also shows the percentage change in the chained mineral price index (green line - right axis).

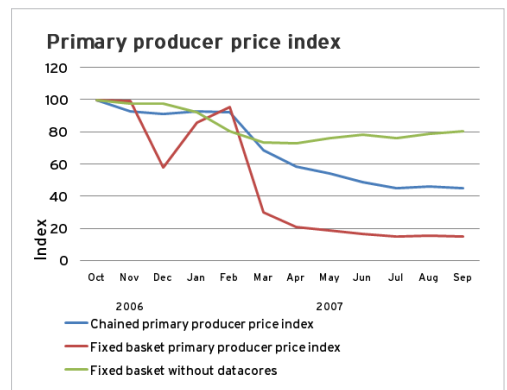


Figure 11: The primary producer price index. The fixed basket (red) and the chained price index (blue). The green line shows the price level when datacores are excluded.

in the beginning. The main reason for this price decrease is the introduction of invention, which lifted the monopoly on Tech II blueprints. One of the main requirements of invention is the use of datacores to make Tech II blueprints. If the datacores are removed from the fixed basket index, we can see the drastic impact they have on the index (the green line in Figure 11). Without the datacores, prices drop by only 20% over the time period. Some datacores have dropped in price by as much as 99%, while other items that can be used for invention have increased 20 to 70-fold, such as installation guides or assembly instructions.

This demonstrates how using a fixed basket in a dynamic world such as EVE can lead to overestimation of the importance of individual items as predicted by theory. This can be fixed using the chained index approach.

When using the chained primary producer index, which accounts for monthly changes in the market basket, the price change is less drastic, or 55% between October 2006 and September 2007. It is still substantial and mostly due to the changes in the research and invention market, but it better reflects the actual price change based on pilot preferences.

During the third quarter of 2007 the price index is relatively stable, though prices continue to decline. The index declined 7.5% between June and July, increased by 2.15% between July and August and then declined again by 1.6% between August and September. The primary producer market has stabilized for now, but we will have to see what happens when new ships become available in Trinity.

Secondary producer price index

The index for items at the secondary production stage includes all items which players need to produce starships or modules to fit on starships. Overall there are more than 1,000 items in the fixed basket index. These items include blueprints and all the various components needed for production.

Examining Figure 12, the difference between using a fixed basket versus chained approach is apparent again. With the fixed basket, the price decline is measured at more than 65%, but with the chained approach the price decline is about 18% from October 2006 through September 2007. Again, there are components needed for Tech II production that have declined the most, led primarily by a reduction in the prices of salvage materials. Out of the 1,040 items in this index, 465 have declined in price, but 449 have increased in price. The 140 remaining items have the same price now as they had one year ago.

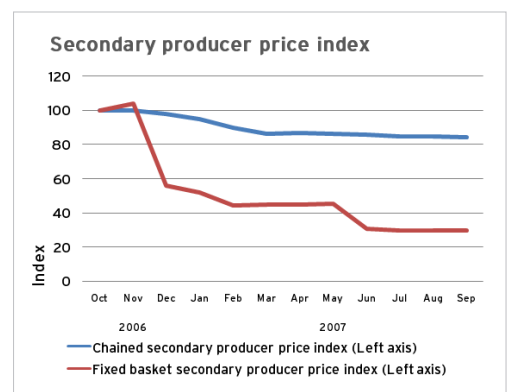


Figure 12: The secondary producer price index. Red line shows the fixed basket index and the blue line shows the chained price index. The difference is due to changes in the price for salvage material.

Focusing on the chained price index, the deflation is relatively stable throughout the period, with prices declining by 1.5% per month on average.

Consumer price index

The consumer price index contains almost 3,500 items of various types. This includes all starships and modules to fit on starships, both Tech I and Tech II. Basically, this index includes everything a pilot can use for his starship or starbase. However, it is debatable if starships can be seen as consumables. But we will define them as durable consumption goods, just like cars on Earth. The fact is that the average lifespan of a starship is less than six months, and thus it is not unreasonable to view them as durable consumption.

Having seen the general price decline in minerals, primary, and secondary production, we should expect a decline in the consumer prices as well. Figure 13 to the right shows, as expected, that consumer prices have declined by 60% if measured using the fixed basket approach, and 40% if using the chained consumer price index. This shows that there is overall price deflation in the entire economic system of EVE Online. The price deflation in consumer prices is spearheaded by a decline in Tech II modules and through price decline in certain cybernetic implants. An interesting result was that many items have increased considerably in price during the time period; items such as standard Tech I starships (one example is the Griffin, up by 108%) and other basic items. This further confirms that the price decline is fueled by invention and the drastic cut in Tech II prices. In total, there are 1,500 products that increase in price, but 1,700 products that declined.

Though the overall conclusion is that there has been more than 40% deflation in EVE Online from September 2006 through 2007, it appears that there are underlying inflationary pressures due to increased purchasing power. The increased purchasing power comes from two sources; number one is the reduction in Tech II prices, and number two is increased revenue through the available faucets in the system (see Figure 7).

Figure 14 shows the monthly percentage change in all four price indices. Comparing the price changes shows that in the third quarter of 2007 the deflation has slowed down considerably. With invention being fully utilized, increased cash, and the new upcoming expansion, it is therefore predicted that price levels in the fourth quarter of 2007 will increase. Keeping an eye on the balance between ISK flow, the relative abundance of minerals, and the increased demand for starships will become more critical over the next few weeks as the expansion of available production models in Trinity nears.

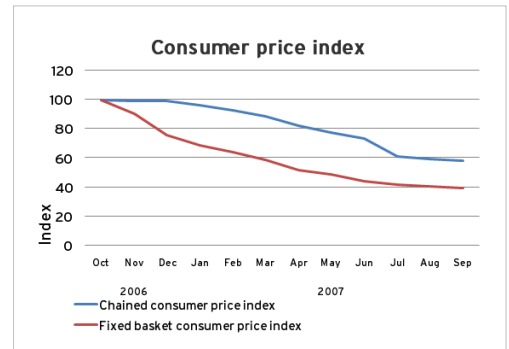


Figure 13: Consumer price index. Fixed basket shown as red while the chained price index is blue. The fixed basket measures more than 60% deflation while the chained index measures inflation as 40%.

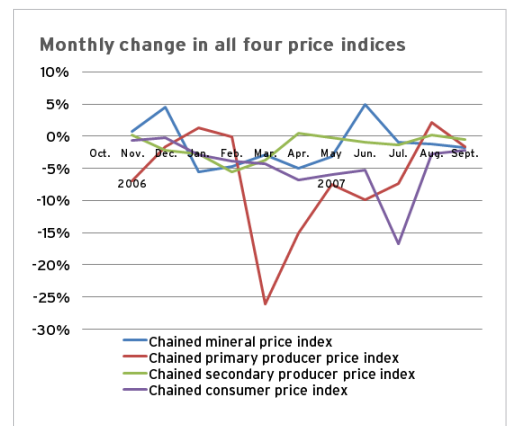


Figure 14: Monthly price level change measured by each of the four price indices. The largest fluctuations are in the primary producer price index. The deflation is leveling off for all price indices in the fourth quarter.

ECONOMIC AND MARKET SNAPSHOTS

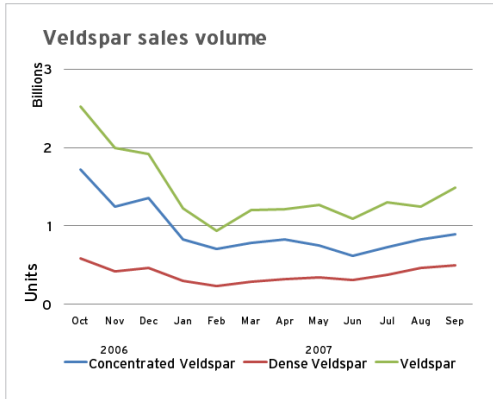


Figure 15: Veldspar sales declined rapidly during the fourth quarter of 2006 but were relatively stable during the 1st and 2nd quarter of 2007. There is an increase in volume in the third quarter which coincides with increased prices.

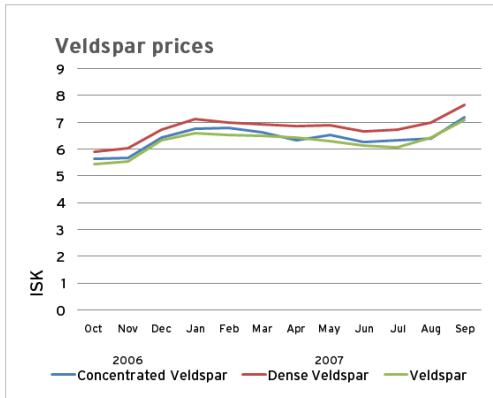


Figure 16: Veldspar prices increased during the third quarter of 2007 after a period of stability. Increased prices at the same time as volume is increasing is a signal for a change in demand for veldspar, and hence tritanium.

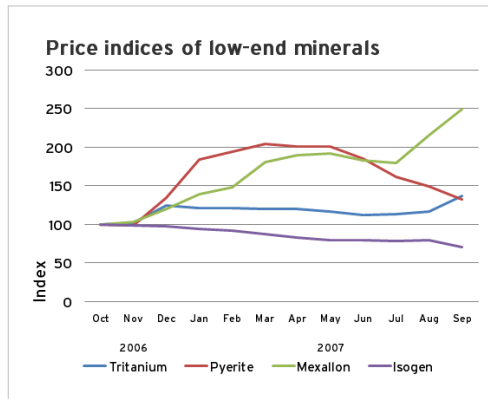


Figure 17: Low end minerals show a mix of price changes over the time period. Tritanium and mexallon increase in price during the third quarter but pyerite and isogen reduced in prices.

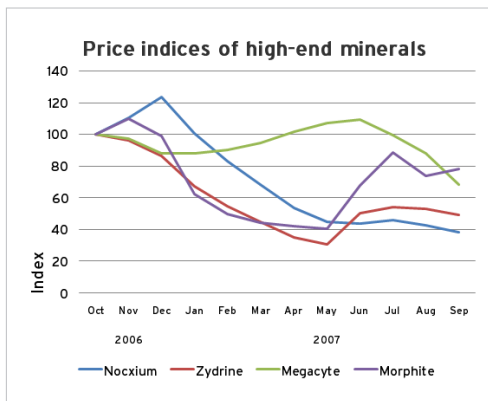


Figure 18: High end minerals are generally declining in prices during the third quarter of 2007 as they have been more or less over the last 12 months. The price increase in morphite seems to have leveled off during the third quarter.

ECONOMIC AND MARKET SNAPSHOTS

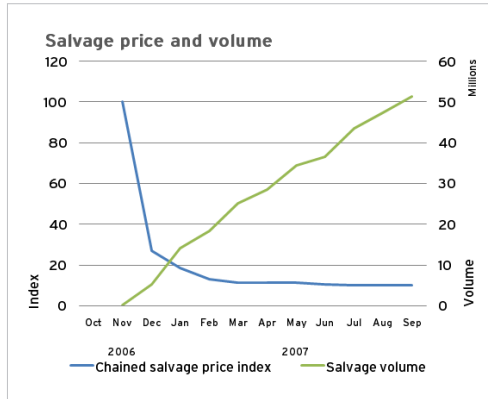


Figure 19: Salvage prices have dropped drastically in prices at the same time as supply of salvage material has increased.

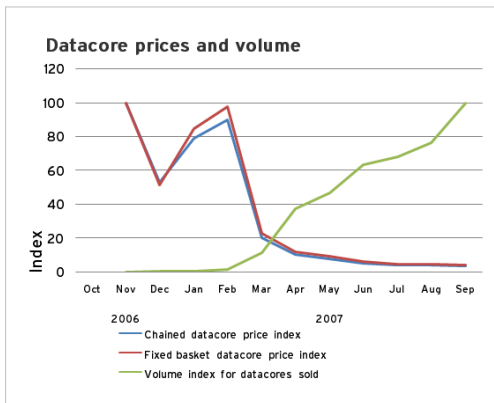


Figure 20: With easier access to datacores the price of datacores has plummeted while quantities traded have increased.

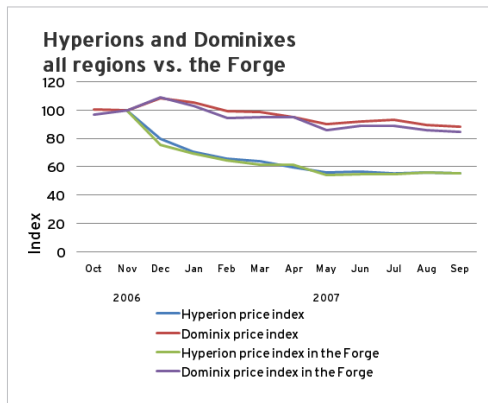


Figure 21: Price index comparison of the Hyperions and Dominixes in all regions vs. the Forge. Note how prices are declining for both vessels and how closely the average price for all regions follows the price in the Forge. The market for these battleships can therefore be seen as an efficient one with symmetric information.

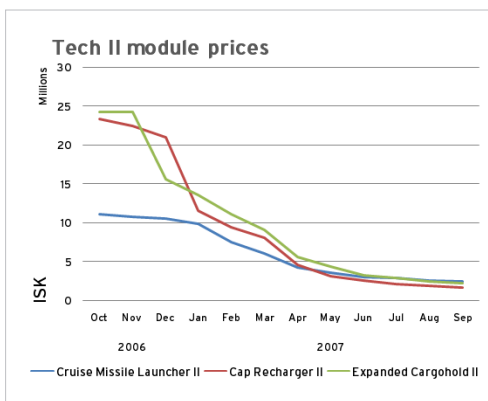
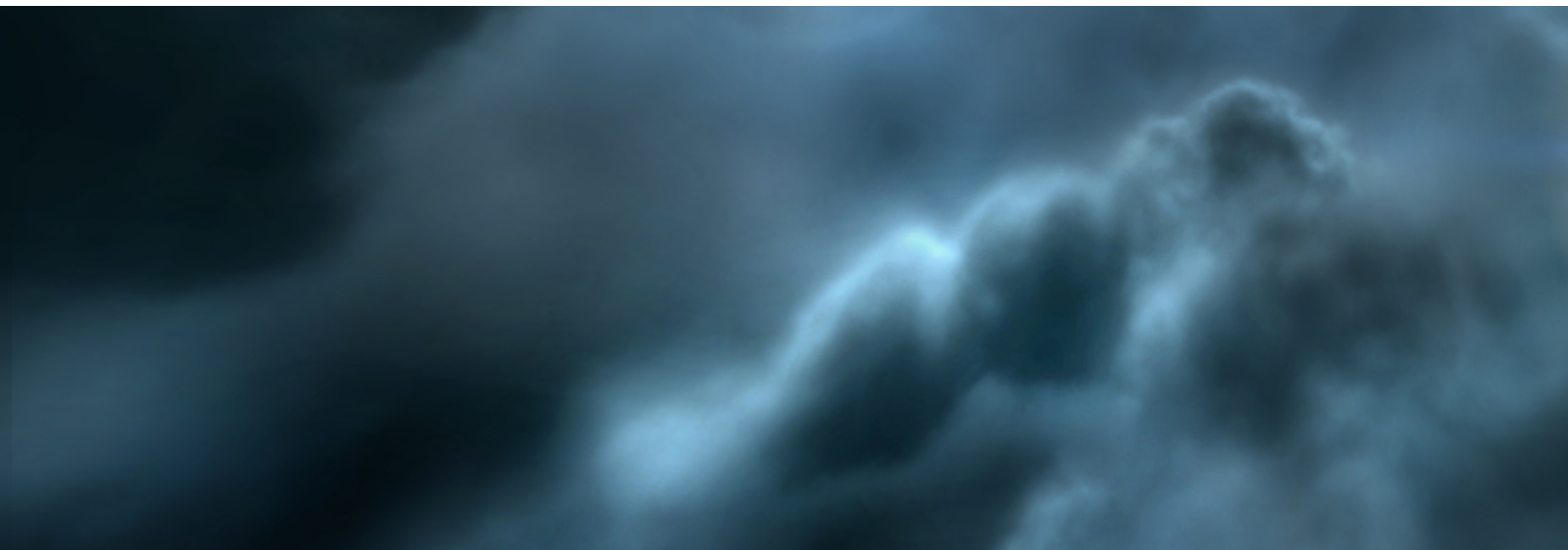


Figure 22: Several Tech II module prices showing the rapid decline in prices after invention is introduced.



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