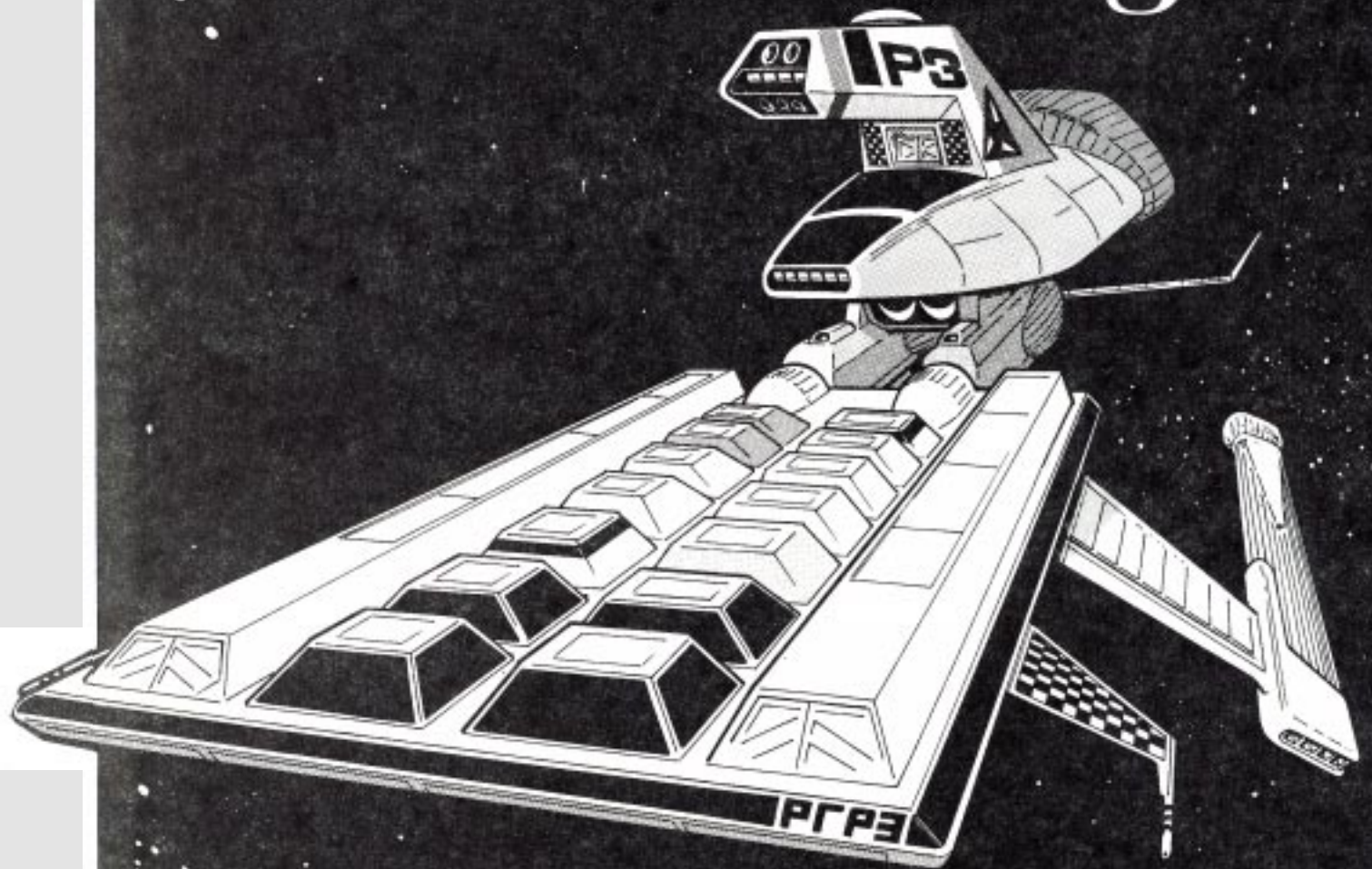


# "Tote that barge!"



## *A short guide to interstellar economics*

by **Matt Bandy**

In the futuristic and business-oriented society of the Frontier Sector, trade is essential, and freighters, being the instruments of trade, are very important. Freighters are the Frontier's answer to the middleman of modern society, buying goods in one star system and transporting them to another for resale.

The life of a freighter captain is a gamble: he either becomes very wealthy or very bankrupt. A good captain can predict price swings in a star system's economy and use that knowledge to further his own ends.

The rules regarding the purchase and resale of cargo in the STAR FRONTIERS® Knight Hawks rules are well-conceived, but fail to take into account the laws of supply and demand and all the factors that influence it. This article attempts to

revise the existing system to consider supply and demand, and at the same time to provide a framework upon which an individual referee may construct the intricate interplanetary economics of his campaign.

### **Supply and demand**

Supply and demand is simply a comparison between the available supply of a certain material object with the consumer's need or desire for it. Whenever the supply of a substance exceeds the demand for the same, the market is glutted and prices of the material plummet. The opposite is true when demand exceeds supply. If a shortage of said substance occurs, a bidding war begins and prices rise.

In many ways, freighter captains resemble players of the stock market. They purchase items at a low price and

transport them to a location where prices are high, making a hefty profit in the process. Often, many freighter captains will begin buying low-priced materials simultaneously, creating an increase in demand and subsequent price rise. In this way, freighters aid the economy of the Frontier by saving many small companies which could have become bankrupt had the glut lasted much longer. On the other side of the coin, freighters occasionally converge on a high-price center and begin selling, glutting the market. Most freighter captains are experienced enough either to arrive at the center before the glut occurs or to anticipate the effects of a glut on other planetary economies, predicting the resulting price changes. By these methods, freighters have an equalizing effect on the economy of the Frontier, causing economic fluctuations to be short-lived.

A glut usually results in a 2-40% (2d10) price decrease and a shortage in a 2-40% price rise. Both phenomena last only a short while, returning 1-10 percentage points toward the base price every day. The base price is listed in the STAR FRONTIERS rules. The point of departure price in the Knight Hawks rules is the base price for bulk loads.

The direct results of an excess of supply or demand on local economies are fairly obvious, but what about the economies of those planets that purchase from the victim of a shortage? (Gluts do not effect prices of the afflicted planet.)

If an industry were forced to pay a high price to obtain raw materials, would not the finished product price be raised to cover the companies' initial purchase of raw materials? An agricultural shortage could result in inflated food prices, which in turn could force unions to demand cost of living raises from their employers, who could raise the prices of their products to cover the raises they had given their workers. Inflation along this line is often irreversible. To prevent it from occurring, governments of agricultural planets buy up most of the surplus crops and then sell them when a

food shortage exists. This way, they also prevent agricultural gluts and shortages from developing.

### Import and export

When a glut or a shortage occurs, it is essential to know what and to where the victim exports in order to determine the effect these events have on the economies of other planets and solar systems. The web of export-import connections along major shipping lanes is illustrated in the following table.

### Import table

Planet	Imports	Origin	Planet	Imports	Origin
Hentz	15% agricultural products	Hakosoar	Zik-kit	20% industrial products	Kdikit
	50% agricultural products	Yast	Kdikit	70% raw materials	Gollywog
	90% raw materials	Hargut	Gran Quivera	60% raw materials	Gollywog
Yast	90% industrial products	Hentz	Morgaine's World	50% agricultural products	Ken'zah Kit
Rupert's Hole Triad	85% raw materials	Outer Reach	Hristan	100% industrial products	Gran Quivera
	25% agricultural products	Rupert's Hole		50% agricultural products	Ken'zah Kit
	25% agricultural products	Kdikit		60% industrial products	Hakosoar
Laco	40% agricultural products	Inner Reach	Hakosoar	40% raw materials	Hargut
	75% raw materials	Outer Reach	Minotaur	75% raw materials	Gollywog
	95% industrial products	Gran Quivera	Lossend	20% agricultural products	Kdikit
Inner Reach	85% raw materials	Outer Reach	Pale	10% agricultural products	Kdikit
Outer Reach	95% agricultural products	Inner Reach	New Pale	30% raw materials	Gollywog
Groth	90% industrial products	Terledrom	Gollywog	90% agricultural products	New Pale
Terledrom	20% agricultural products	Groth		85% industrial products	Pale
Hargut	75% raw materials	Zik-kit		40% industrial products	Minotaur
	30% agricultural products	Hakosoar	20% industrial products	Lossend	
	30% industrial products	Gran Quivera	10% industrial products	Triad	
	30% industrial products	Hentz	30% agricultural products	Kdikit	
Ken'zah Kit	15% agricultural products	PGC Ag Ships	10% agricultural products	Ken'zah Kit	
	70% industrial products	Zik-kit			

These percentages assist the referee in determining the result of a shortage or a glut on his campaign's economics. For instance, if accelerated pirate activities exist in the White Light system, a smaller than usual amount of raw materials will be processed and shipped resulting in a shortage. This shortage will in turn cause a price increase of

35% (shown by die roll) on all raw materials exported by Gollywog. The recipients of these materials are revealed to be Lossend, Minotaur, Gran Quivera, and Kdikit by a quick glance at the Imports Table.

Lossend imports 30% of its raw materials from Gollywog. This means that 30% of its total raw materials stock is

increased in price by 35%. 30% x 35% equals a 10.5% (rounded off to 11%) net cost increase on all incoming goods. To make up for this cost increase, industries on Lossend increase the price of other products by 11%. This cost increase affects Gollywog in turn because it imports 20% of its industrial products from Lossend.

Minotaur imports 75% of its raw materials from Gollywog. The shortage results in a 26% ( $75\% \times 35\% = 26.5\%$ , rounded off to 26%) net price increase, which in turn affects Minotaur's industrial prices. This price increase affects Gollywog, which imports 40% of its industrial products from Minotaur.

Gran Quivera imports 60% of its raw materials from Gollywog, so the shortage results in a 21% ( $60\% \times 35\% = 21\%$ ) net cost increase on its raw materials. This cost increase would be passed on in varying degrees to Laco, Morgain's World, and Hargut.

Kdikit is handled in a similar manner. Due to strict price controls imposed by the UPF, prices on all domestic goods do not rise to match those of imports.

### Economic fluctuation types

Random economic fluctuation generation and the random determination of victim planets are accomplished through the use of the following tables.

#### Economic fluctuation table

##### d100 event

- 01-40 no event
- 41-55 industrial glut
- 56-70 resource glut
- 71-85 industrial shortage
- 86-00 resource shortage

Roll on the Economic fluctuation table once every 20 days. Once the type of fluctuation is determined, roll on the appropriate planetary table.

The referee may find it useful to decide upon the cause of a specific fluctuation. This makes the game more enjoyable to players traveling in or through the affected solar system. A detailed example follows.

*Day 1:* A roll of 63 on the Economic Fluctuation Table indicates a resource shortage on the planet of Hargut (selected by a d100 roll on the Resource Planetary Table). A price increase of

#### Industrial planetary table

##### d100 planet

- 01-08 Hentz
- 09-16 Rupert's Hole
- 17-25 Triad
- 26-33 Inner Reach
- 34-42 Outer Reach
- 43-50 Terledrom
- 51-58 Zik-kit
- 59-66 Kdikit
- 67-74 Gran Quivera
- 75-82 Hakosoar
- 83-90 Minotaur
- 91-95 Lossend
- 98-00 Pale

#### Resource planetary table

##### d100 planet

- 01-20 Outer Reach
- 21-40 Hargut
- 41-60 Zik-kit
- 61-80 Pale
- 81-00 Gollywog

21% (2d20 roll) results on all raw materials on Hargut.

*Day 2:* The 21% price increase reaches the planets of Hentz and Hakosoar. Hentz imports 90% of its raw materials from Hargut, so 90% of its raw materials are increased in price by 21%. This results in a 19% ( $90\% \times 21\% = 18.9\%$ , rounded off to 19%) net cost increase on all raw materials on Hentz. The planet's industries are forced to raise their prices by that amount to cover their purchase of raw materials and retain the same profit margin. Hakosoar imports 40% of its raw materials from Hargut, so a net cost increase of 8% ( $40\% \times 21\% = 8.4\%$ , rounded off to 8%) results on all raw materials bought or sold on the planet. This forces its industries to raise the prices of their finished goods by a similar percentage.

The initial cost increase of 21% on Hargut is reduced to 14% ( $21\% - 7\%$ , the result of a d10 roll).

*Day 3:* Yast and Hargut (surprise, surprise!) receive industrial price increases from Hentz. Yast imports 60% of its industrial products from Hentz, so a net price increase of 11% ( $60\% \times 19\% = 11.4\%$ , rounded off to 11%) falls upon all industrial products on the planet. Hargut, the one that started it all, imports 30% of its industrial goods from Hentz, so a 6% ( $30\% \times 19\% = 5.7\%$ , rounded off to 6%) net cost increase on this type of product results.

Hristan imports 60% of its industrial goods from Hakosoar, so a net cost increase of 5% ( $60\% \times 8\% = 4.8\%$ , rounded off to 5%) results on that type of goods on the planet. The inflation on Hentz and Hakosoar is reduced to 13% ( $90\% \times 14\% = 12.6\%$ ) and 6% ( $40\% \times 14\% = 5.6\%$ ), respectively, as the reduction of the price variation reaches them. The raw materials cost on Hargut is reduced by another 9% to only 5%.

*Day 4:* The inflation on industrial prices on Yast, Hargut, and Hristan is reduced to 8% ( $60\% \times 13\% = 7.8\%$ ), 4% ( $30\% \times 13\% = 3.9\%$ ), and 4% ( $60\% \times 6\% = 3.6\%$ ), respectively, because the first reduction of the price variation finally reaches them. The industrial and raw material inflation on Hentz and Hakosoar is reduced to 5% ( $90\% \times 5\% = 4.5\%$ ) and 2% ( $40\% \times 6\% = 2\%$ ), respectively, as the second reduction of the economic fluctuation arrives. The raw material inflation on Hargut is reduced to zero by a roll of 8.

*Day 5:* The industrial price increases on Yast, Hargut, and Hristan are reduced to 3% ( $60\% \times 5\% = 3\%$ ), 2% ( $30\% \times 5\% = 1.5\%$ ), and 1% ( $60\% \times 2\% = 1.2\%$ ) as the second reduction of the fluctuation reaches them. The industrial and raw material price increases on Hentz and Hakosoar end.

*Day 6:* The industrial inflation on Yast, Hargut, and Hristan ends.

### Some closing notes

For the sake of simplicity, I have ruled a time lapse of one day for price increases (and reductions on those increases) to move from planet to planet. In actuality, it would take one day for every light year between the planets — a change that referees may make in their campaigns.

A flow chart or procedure table was not included for the simple reason that it would be complicated into incompre-

hensibility. It is much easier to deduce the procedure from the examples. (I tried to create a procedure table, but it was too long and undecipherable!)

For an added touch of realism, referees may want to include an availability modifier in certain systems. This is a price change of +5% on all imported goods.

Each type of cargo may be obtained only at a center of the appropriate type (e.g., raw materials at resource centers).

Since agricultural gluts and shortages are very rare, agricultural cargoes are bought and sold by the prices given in Tony Watkin's article "Rare Wines and Ready Cash," in DRAGON® issue #93.

Readers will notice that this system requires a great deal of work on the referee's part, but it pays off, especially if one of the PCs owns a freighter. It's much more challenging than the system in the Knight Hawks rules, thus proportionately more fun to use.