

Black-Hole Economics

By James Roumasset¹

1. Introduction

Government failure describes the failure of government-organized projects and policies that fail to deliver their expected benefits and/or impose large unintended costs. A particular type of government failure concerns the case where government efforts to solve a problem actually make the problem worse. *Black-hole* government failure refers to a vicious circle as the worsening problem calls forth ever more costly public spending and market controls. Three examples are explored briefly below.

2. The dynamics of prohibition enforcement

Prohibition refers to the period, 1920-1933, during which the production and consumption of alcoholic beverages were prohibited in the United States. But while prohibition had a large negative short-run effect on alcohol consumption, its long-run effect was modest at best. According to Warburton (1968) as verified by Miron and Zweibel (1991), alcohol consumption fell to 30% of its pre-prohibition levels in 1921 but by 1925 had increased to 65% and by 1929 to 71% of those levels.

These estimates are conservative. By “pre-Prohibition,” Warburton and Miron/Zweibel were referring to the years before 1919 when the very public sentiment that led to the 18th amendment had already reduced alcohol consumption substantially below its levels in 1915-1917. By constructing an index of pure alcohol consumption from Warburton’s breakdown of spirits, wine, and beer, Roumasset and Thaw (1999) find that total consumption per capita had risen to well above its 1919 level by 1929.

Retaining the more conservative estimates, one can estimate the prices implied by these quantities. Assuming price and income elasticities of .7 and 1 respectively, Roumasset and Thaw calculate implicit alcohol prices of

¹ J. Roumasset is Professor of Economics at U. of Hawaii. This paper was prepared for the International Western Economics Association, July, 1999, San Diego, CA.

3.45, 1.82, and 1.78 dollars for 1921, 1925, and 1929 respectively, all relative to pre-Prohibition prices.

The tendency for implied prices to fall in the long-run is all the more dramatic in the face of evidence on public enforcement effort. Expenditures by the Bureau of Prohibition alone rose from 2.2 to 10 to 12.4 million dollars from 1920 to 1925 to 1929. Adding in the anti-smuggling effort of the U.S. Coast Guard and the legal costs of prosecution and incarceration net of penalties and fines, Warburton shows that total enforcement expenditures increased from 2.4 to 37.9 million dollars over the same period (i.e. at an average rate of \$3.8 million per year from 1919 to 1929). From their 1921 level of \$7,437 million, enforcement expenditures increased to \$37,890 in 1929. That is, in the face of a fivefold increase in enforcement, implied prices fell by 50% or more.

What can account for this inexorable fall in implied prices (and the corresponding increase in consumption) in the face of massively increasing enforcement? If we define supply price as inclusive of all risks, inclusive of consumer risk, then enforcement expenditures increase the full marginal cost of illegal alcohol provision as well as the corresponding equilibrium consumer price. Figure one illustrates this. Notice that the percentage of total production cost due to risk increases dramatically. This change in production cost calls forth Schumpeterian investment and innovation (largely through the dynamics of entry and exit) in the technology and capital equipment of evasion (speakeasies, police bribes, armed guards, smuggling methods, fast boats etc.) which lowers the part of marginal cost due to the risk of punishment. In other words, the short-run effect of prohibition is to create a large wedge between the full consumer price and the marginal production cost. This wedge attracts innovation that lowers the size of the wedge. Further increases in enforcement continue the dynamic. The short-run wedge increases, but this merely induces further innovation and investment in evasion. Thus price inexorably decreases towards its original level, even as enforcement increases geometrically.

Changes in market structure can exacerbate the black hole of prohibition. Even if economies-of-scale in production have been exploited, rather large economies-of-scale characterize evasion. As a result, prohibition begets the monopoly power associated with organized crime. The resulting increase in industry concentration begets activities that shift the demand curve outwards. This effect is particularly important for illicit drugs. A stylized

fact of the drug industry is that pushers recruit new users by lowering prices until the user becomes addicted. Clearly such recruiting is unprofitable in a competitive industry, but may be attractive to monopolistic or oligopolistic firms.

Decreasing competition is exacerbated further as firms seek monopolies over territories (through gang warfare etc.). Thus it is plausible that the "war on drugs" has itself led to increased addiction and consumption. Another feature of the black-hole syndrome illustrated by the war-on-drugs is the complicity of police departments, offices of prosecution, and publicly-funded prevention programs. Legalization of substances such as marijuana, cocaine, and heroin, even with high taxes, would lower the budgets of law enforcement agencies and, as competition is restored, would remove the incentive for recruitment efforts that current prevention programs aim to offset.

3. Socialization of transportation: streetcar named desire

Figure 2² shows the transition in the U.S. transportation industry from streetcar to bus to private automobile. Government acted to block these transitions. In Los Angeles for example, in contrast to the conventional wisdom as portrayed in *Who Framed Roger Rabbit*, wherein the evil General Motors is depicted as buying out the streetcar companies in order to deprive the public of their services, the government actually delayed the transition to buses (Slater, 1997).

Figure 3 shows the progressive decline of bus profits in Honolulu. In 1972, after the private profitability of buses had completely eroded, the City of Honolulu socialized public transportation and continued to run *The Bus* company at ever increasing losses. By 1997, *The Bus* was losing \$80 million per year and spending \$6 for every \$1 in revenues. Socialization led to a dramatic increase in costs. Wages increased by 40% in the first four years, and several high-cost, low-return routes were added in response to political pressures. Whereas the private sector would have allowed large buses to exit the market, perhaps replacing them with smaller vehicles with specialized routes, the government acted against the market trend. Losses by *The Bus* company would have been even larger, but the State of Hawaii

² Figure 2 is excerpted from Slater (1997). Figure 3 was also provided by Cliff Slater.

passed legislation to further limit competition, e.g. by banning the private sale of high-occupancy transportation services.³

Nor are subsidies to *The Bus* justified by lower congestion. Large buses often block other traffic and may provide negligible net benefits in congestion reduced (Wendell Cox, <http://www.publicpurpose.com>). In Honolulu, expanding expenses were directed more toward making *The Bus* "fair" to workers, the elderly, and other groups than to the accommodation of increased ridership during peak-traffic hours and in congested corridors.

These examples and others (see e.g. Slater, 1997) suggest a stylized pattern of *subsidize*, *socialize*, and *regulate* in order to protect a dying industry. The political economy dynamics of such a process are well-known. The potential beneficiaries of the protection are few and highly organized, but the potential losers are many and politically fragmented. Thus benefits carry large political weights relative to the costs, and economically inefficient policies and projects are rendered politically salient (Olson, 1965).

4. How the quest for food security begets food scarcity

Another type of governmental black hole relates to the provision of security especially as motivated by a false sense of scarcity. Many developing countries in particular pursue consumer-oriented programs designed to insulate consumers from high domestic prices of staple food commodities caused by domestic shortages and/or high international prices. The rhetoric of food security also includes the objective of increasing farm-gate prices in order to increase farmer incomes and to increase the domestic production of food for self-sufficiency. For example, the importation of rice in the Philippines is monopolized by the National Food Authority (NFA), a government marketing-board. Figure 4 shows the effect of simultaneously trying to lower consumer prices and increase producer prices. In addition to the shaded excess burden triangles, the economy suffers additional deadweight losses equal to the implied subsidies of producers and consumers relative to the world prices, each times the marginal social cost of public finance. Such programs would be extremely costly and politically impossible to maintain, due to large increase in the implied tax burden.

³ The Hawaii courts had already banned private jitneys in 1940 (Cliff Stater, personal communication).

Government can achieve an equivalent result by banning all private rice trade, importing the amount $Q_D - Q_S$, selling the rice at a loss and continuing to subsidize production as before. The required subsidies, excess burden, and tax friction will be exactly the same as before, though there are likely to be additional costs associated with government inefficiencies.

It is important to note that the government cannot maintain the target prices without subsidizing *all* rice produced and *all* rice consumed. Buying *some* rice at above farm gate and selling *some* rice at below market prices will result in multiple prices -- intramarginal prices and equilibrium prices. It will also set in motion a rent-seeking process (in order to obtain the subsidized prices) that will disproportionately favor those with better political connections and induce influence-peddling that will partially dissipate the rents so expensively obtained. Yet this is the inevitable consequence of trying to control prices of a commodity which represents a substantial portion of the economy. Since it is fiscally impossible to subsidize all buyers and sellers, the government must implicitly compromise its ostensible objectives. In addition to operating intramarginally, the government will typically favor consumers *or* producers at the expense of the other group. In the Philippines, providing for consumers results in negative protection for producers.

To see the effects of such a policy, imagine that the government gives up on its objective of keeping producer prices above consumer prices and simply tries to lower the domestic price of rice to a target less than the world price by importing a fixed quantity. The effect can be analyzed as an outward shift in the supply curve resulting in a lower price than in autarky. Now suppose that the government fails to import a sufficient quantity such that equilibrium price falls to its target level. Selling imports at less than the equilibrium price cannot lower the equilibrium price. If the subsidized rice finds its way to those consumers with the highest marginal willingness to pay, there is no effect on equilibrium price. If some of the rice is consumed by low willingness-to-pay individuals (which is one of the intended consequences), then equilibrium price will actually rise above its level without such subsidies. Now if the rent-seeking elite receive a disproportionate share of the subsidy benefits, the effect of the subsidy is exactly opposite of its ostensible objectives, i.e. the subsidy increases the equilibrium price (paid by the politically disenfranchised).

4.1 The role of government in commodity price stabilization

The welfare consequences of price stabilization depend on the source of price fluctuations. Four sources are discussed here.

If the source of fluctuation is international prices, it is a simple matter to demonstrate that stabilization, even by costless buffer stocks, is welfare reducing. Consumers gain more from low prices than they lose by high prices and producers gain more from high prices than they lose from low prices, except in the case of perfectly inelastic demand and supply curves. The possible exception to this rule concerns the case of risk averse consumers and producers, but not a single economist has been able to demonstrate that risk aversion is of the right type (i.e. amenable to risk sharing, not idiosyncratic) and of a sufficient magnitude to overturn the result just stated. Moreover, once the assumption of costless storage is dropped, one would have to demonstrate that the gains of stabilization were greater than the cost of storage. Finally, all imaginable storage and release rules may in fact be destabilizing, due to the inevitabilities of low prices in the face of insufficient excess storage or government purchase capability and high prices in the face of insufficient stocks (Williams and Wright, 1991).

The case against price stabilization is somewhat less devastating in a closed economy wherein a stochastic supply is the source of instability. In this case, if storage is costless and the stabilizing agency has perfect foresight, then stabilization can lead to welfare gains. A simple demonstration of this result can be obtained by graphing high and low linear supply curves that are assumed to alternate in odd and even years. By stabilizing the price at its mean level, the agency procures additional grain when supply is high and sells it to the next year when supply is low. Since in reality the agency is not omniscient about future supply, however, and since supply is random, not strictly alternating in odd and even years, the government will have to peg the price at something above the mean price, accumulate more in times of plenty, and deplete less in times of shortage. This will lower the probability that stocks will eventually be exhausted during times of rising prices. But pegging the price at the higher level has the effect of wiping out the gains from stabilization that occur in the contrived example described above. In addition, two problems remain. There is still the possibility that stocks will be exhausted and price will move above its pegged level. Also the irregularity and varying severity of bad years implies that the average inventory period will be longer than the one-year in the hypothetical

example, and storage costs will be correspondingly higher. Again the conclusion emerges that the buffer scheme has high costs and is likely to have negative welfare gains. Again the conclusion emerges that the buffer scheme has high costs and is likely to have negative welfare gains.⁴

Another commonly alleged motive for government intervention to stabilize prices is the need to control non-competitive rice traders. It is commonly believed that a rice cartel manages to buy low from farmers during harvest season and sell high to consumers during the lean season. This myth is remarkably resilient to evidence. For example, it has persisted with equal force both before and after Mears' (1974)⁵ exhaustive study showing both the competitiveness and efficiency of rice markets in the Philippines and his similar study for Indonesia (1981). Moreover, if barriers to entry are present, it is due to the licensing and other requirements of the regulatory structure and the appropriate policy response is to liberalize those regulations, not to compound the problem with price controls.

A stylized fact of seasonal rice prices is that prices often rise faster than storage costs during the lean season and decline as inventories are released in anticipation of the wet season harvest. This pattern has not been carefully confirmed due to the difficulty of knowing whether a particular week, e.g. the end of August is really before the wet season or whether it in fact coincides with early harvests. At any rate, the perceived pattern is suggestive of what may be a speculative bubble, not the result of monopoly forces. It is well known that expectations of prices climbing faster than storage costs may induce owners of grain stocks to release them slower than the pattern that would prevail under perfect information and that those expectations thus become self-fulfilling. Eventually, however, traders realize that they will be left with excess stocks at harvest time and compete with one another to dispose of those stocks. Happily, there is a common solution to the problem of prices rising above their competitive equilibrium

⁴ Buffer-supported price band schemes are typically even more inefficient than price floor or price peg programs. The price band, like the peg, is inherently asymmetrical. With sufficient resources, the government may be able to prevent price from falling but is cannot always prevent price from rising. A price band scheme also incurs additional storage costs. Simply put, the problem is that the agency acquires grains at the floor price and them must wait until the price rises to the ceiling until the stocks can be released. That is likely to be a long wait, and storage costs (implicit rental on land buildings, and equipment plus interest foregone on the value of stored grain plus disappearance to spoiled, pests, and pilfering) are highly time sensitive. It would be much less costly to release the grains at a lower ceiling price, in the limit at the price floor. That is, the optimal wedge between price floor and ceiling is likely to be zero (see Williams and Wright, chapter 14).

⁵ See also Umali, 1990.

values, namely private access to rice importation and easy entry into the rice trading business. Monopoly power is easily cured by entry, and speculative bubbles would be offset by the countervailing expectation that high prices would call forth additional imports. An additional advantage of private importation is that the private sector is not burdened by the elaborate contracting, procurement, bidding, and other administrative requirements that delay government purchases. Again, the appropriate policy cure for such informationally-induced price spikes is the decentralization of import decisions that is achieved through private sector importation.

Finally, competitive prices will rise faster than equilibrium levels when actual harvests and/or imports are lower than expected. For example, the dramatic price increase during the lean season of 1995 triggered by a no import policy and a low dry season harvest is not *prima facie* evidence of monopoly power as is commonly believed. Competitive prices of a fixed supply of grain behave as do prices of a non-renewable resource, i.e. the competitive price at any pt. In time equals the marginal cost of production plus the marginal storage cost plus the marginal user cost. It is this last term which rises when there is an unexpected shortage. In the case where such an informational shock occurs at a point in time, the equilibrium price jumps to a new level needed to efficiently ration rice until the supply can be increased again due to harvest or additional imports.

In addition, economic waste is created by policies that distort patterns of production and consumption over space and time. Interestingly, market development and integration with the international economy brings lower average prices to consumers, higher average prices to producers and greater price stability. Such developments are characterized by spatial integration but temporal separation. NFA policies result in too little spatial integration and too much temporal integration implying too much storage. That is, the common idea that market integration means more investment in both transportation and storage is incorrect. Transportation is a partial substitute for storage (e.g. as just-in-time delivery obviates the need for storage) and modernization implies more transportation and less storage.

In summary, government intervention in the name of food security is counterproductive. Government timing of importation and rice sales result in huge unnecessary expenses and destabilization of rice prices. If those same expenditures were invested in agricultural development, through irrigation and infrastructure construction and research and development, farmers

consumers would realize lower prices without government price controls and producers would realize higher incomes. The government ban on private imports and exports likewise stifles investment in the capital, knowledge and institutions that would otherwise facilitate market integration, thus lowering the wedge between consumer and producer prices.

5. Concluding remarks

All of these blackhole policies are motivated by fear -- fear of scarcity, fear of change, and fear of immorality. All of them result in artificial scarcity which motivates further distortions. The remedy is replacing the fear of scarcity by its understanding. When transparency is used to allow scarce resources to find their highest and best use, abundant opportunities for progress can be created for all segments of society, not just the privileged elite.⁶

References

- Friedman, Milton; Schwartz, Anna. Monetary Trends in the United States and the United Kingdom, their Relation to Income, Prices and Interest Rates, 1867-1957. University of Chicago Press (1982).
- Olson, Mancur, *The Logic of Collective Action*, Harvard University Press, Cambridge, MA (1965).
- Miron, Jeffrey. Searching for Alternatives: Drug-Control Policy in the United States. edited by Melvyn Krauss and Edward Lazea; P 68-76. Hoover Institution Press Stanford University (1991).
- Miron, Jeffrey; Zwiebel, Jeffrey. "Alcohol Consumption during Prohibition". American Economic Review. Vol. 81 no 2 (1991).
- Warburton, Clark. *The Economics Results of Prohibition*, New York: Columbia Press, 1968.
- Roumasset, James, "Development is Letting Go of Fear," Program on Conflict Resolution,
U. of Hawaii, WP 1993-3.
- Williams, Jeffrey and Brian Wright, *Storage and Commodity Markets*, New York: Cambridge U. Press (1991).

⁶ Roumasset, 1993.