

# 'Protecting Consumers' by Raising Gas Prices?

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Under “zone pricing,” gasoline distributors charge different wholesale prices — known in industry parlance as the Dealer Tank Wagon (DTW) price — to service stations in different areas. Legislators in Connecticut and some other states have criticized this practice as anti-competitive and have introduced legislation to outlaw it.

We have examined Connecticut DTW prices and found that price differences are closely related to demand (as measured by income) and supply (as measured by the number of residents per station). Given this finding and previous research into zone pricing, we conclude that a Connecticut ban on zone pricing would likely result in higher prices at the pump for the majority of the state and no drop in pump prices for the remaining areas. Lawmakers in Hartford and other state capitals should take note of this finding.

**ANALYSIS** As Econ 101 students know, prices will differ across markets to the degree that goods are imperfect substitutes and transportation costs are present. That is, the price of potato chips will be restrained by the price of corn chips and popcorn and the ease with which consumers can switch from one snack to another if the price of potato chips were suddenly to skyrocket. Beyond that, prices will be determined by supply and demand within each market.

As a measure of supply, we use the number of residents per gas station in Connecticut’s various postal zones, which we identify using the last three digits of their ZIP codes. This measure, while imperfect, well captures the dimension of market supply that, in addition to quantity, is relevant for price determination: the number of suppliers and thus the degree of competition. In Figure 1, gray represents a high resident-per-station ratio (i.e., low competition) area and blue the opposite. Clearly, Fairfield County and the Hartford area have the least competition in Connecticut, while the Norwich/New London area is the most competitive.

We use average incomes as a measure of demand. In Figure 2, gray indicates the highest income areas and blue the lowest. The highest incomes in Connecticut are in Fairfield County and the lowest are in the Hartford area.

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Basic theory predicts that gasoline prices should be highest in Fairfield County where supply is low and demand high. Prices in the Hartford area are indeterminate because of opposing forces — low relative supply, but also low relative demand. The remaining areas (most of the state) should have lower prices than Fairfield County.

Under a zone-pricing ban, what price will suppliers charge as their uniform, statewide price? The uniform price is unlikely to be either the lowest or the highest in the current distribution of zone prices; gasoline wholesale suppliers would face a general averaged demand curve, and neither of those prices is likely to maximize profits. That leaves some price in the middle of the distribution. Because no state has banned zone pricing and thus we have no real-world examples of uniform prices, we chose the average zoned DTW price as the new uniform price under a ban.

In Figure 3, we estimate the change in DTW price as the difference between the actual and average DTW price. Gray areas reflect the largest fall in DTW price and blue the largest rise. Fairfield County, with the highest demand and lowest supply, was paying the highest DTW price under zone pricing and would see the largest decline in DTW under the ban. The rest of the state was generally paying DTW prices below the average. (We exclude ZIP code zone 062 because of insufficient data.)

Banning zone pricing would lower DTW prices for Fairfield County and increase them in the rest of the state. The ban would increase prices for stations in the lowest income areas in order to reduce them in the highest income area of the state.

How would the change we calculate for DTW prices translate into retail prices? According to an earlier *Regulation* article (“Economics at the Pump,” Spring 2004), Cary Deck and Bart Wilson used experimental economics to simulate the effects of both zone pricing and a unified DTW price on the behavior of gas stations, with university students playing the role of station operators and receiving compensation based on how profitably they operated their hypothetical gas stations (mimicking the incentives of station owners). Deck and Wilson found that, when a zone pricing prohibition was adopted and a uniform DTW price established, stations that previously paid a lower DTW price under zone price quickly raised their pump prices to reflect the higher DTW price, with the increase averaging 10.9 percent in highly competitive areas. In low competition areas, however, where the unified DTW price was lower than the previous zone pricing DTW price, sta-

Figure 1

### Measuring Supply

Residents per gasoline station in Connecticut, by ZIP code zone

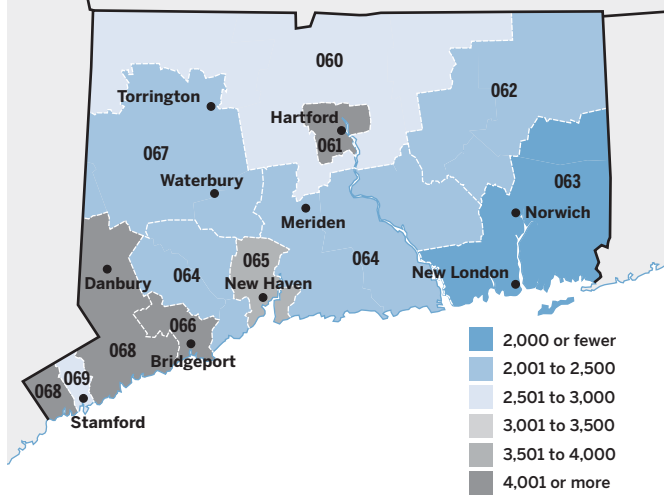


Figure 2

### Measuring Demand

Average income in Connecticut, by ZIP code zone

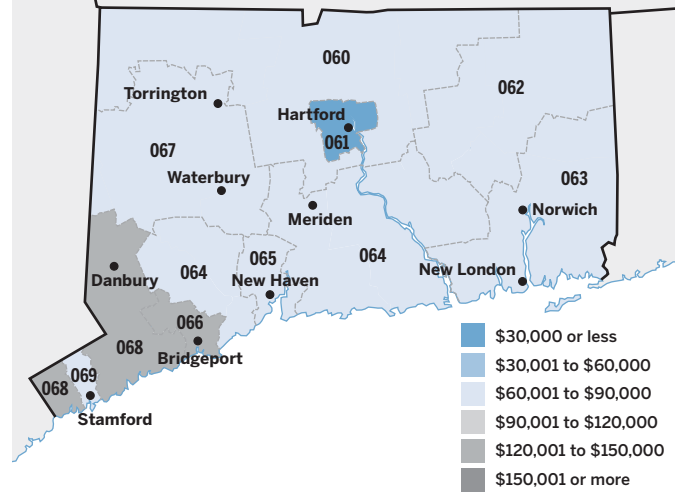


Figure 3

### The Effect of a Zone Pricing Ban

Change in DTW prices, by ZIP code zone

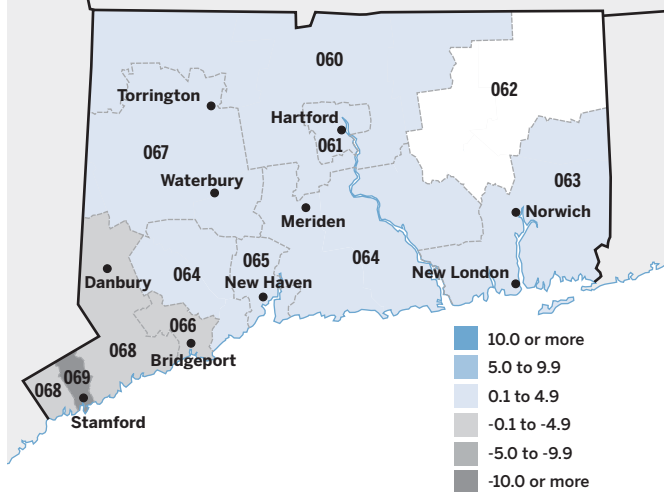
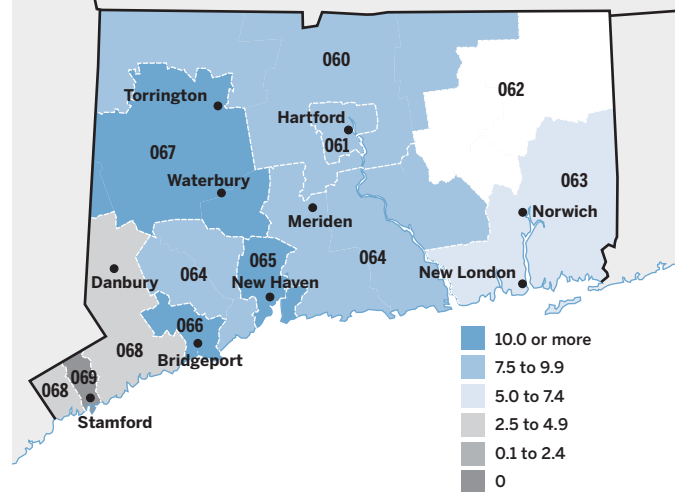


Figure 4

### Effect at the Pump

Estimated change in retail prices under a zone pricing ban, by ZIP code zone



tion owners were slow to lower their pump prices; apparently, the station owners preferred to pocket the rents. And when retail prices did fall in those areas, they did not fall far; Deck and Wilson found that in low competition areas, when DTW prices fell in the wake of a zone pricing ban, the change in pump prices was statistically indistinguishable from zero.

We incorporated Deck and Wilson’s research into our study of Connecticut. We defined areas as competitive if they currently (under zone pricing) pay DTW prices that are less than the uniform, statewide price we calculated, and we defined areas as uncompetitive if they pay DTW prices above the unified price that we calculated. We then applied Deck and Wilson’s retail price findings. The results are shown in Figure 4;

in essence we find that the average price at the pump increases and the burden of the increase falls disproportionately on those with the lowest incomes.

**CONCLUSION** We carried out this research in anticipation of the Connecticut General Assembly’s consideration of legislation to ban zone pricing. Our study helped to persuade legislators to defeat the proposed ban on March 13, 2007.

Proponents of the ban, including Gov. M. Jodi Rell and Attorney General Richard Blumenthal as well as some representatives, have said that they continue to favor the ban and that they will try to reintroduce it in different legislation in the future.



# Strangling the Goose that Lays the Golden Drugs

BY HENRY I. MILLER

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There is an old saying in Washington that when something has been repeated three times, it becomes a fact. The saying's most recent application is the supposed shortcomings in the safety of prescription drugs. The reality is that although all drugs have side effects — which can be serious and/or frequent — modern pharmaceuticals have wrought miracles in the control of pain, the treatment and prevention of infections, and the amelioration of diseases of aging such as arthritis and cancer.

Regulators need to balance patients' access to therapies with ensuring the safety of drugs. The consequences of poor decisions can be dire: promote access at the expense of safety, and a dangerous product can cause incalculable harm; over-emphasize safety at the expense of access, and patients suffer from the absence of life-saving and life-enhancing medications.

Recently, beleaguered by congressional and other critics, the Food and Drug Administration has been striving to demonstrate its commitment to drug safety — but it has done little to address a far more pervasive, more intransigent problem: unwise, unproductive, risk-averse regulation that itself has severe side effects. In spite of increasingly more powerful and precise technologies for drug discovery, purification, and production, during the past 20 years development costs have skyrocketed. The trends are ominous: the length of clinical testing for the average drug is increasing, fewer drugs are being approved, and the number of applications to the FDA by industry for marketing approval has been decreasing for more than a decade.

**MISDIAGNOSIS** In January, the FDA announced new initiatives directed at the safety of new drugs, including a plan to perform a comprehensive assessment of the safety of some new drugs within 18 months of their introduction, and to issue a “report card” on their performance. Although this may sound plausible, it appears to be inconsistent with data showing that, in fact, newer drugs confer an advantage over older ones in reducing mortality. In a study of patients who took drugs during January–June 2000, those who took newer medications were less likely to die by the end of 2002. The estimated mortality rates were directly related to the time that had elapsed since approval of the drugs: for pre-1970 drugs, the estimated mortality rate was 4.4 percent, while the mortality rates for drugs approved during the 1970s, 1980s, and 1990s were 3.6

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percent, 3.0 percent, and 2.5 percent, respectively. Not surprisingly, drugs are getting better all the time.

A related point is the myth, often cited as fact by regulators and members of Congress, that rapid advances in science are outstripping regulation. Although some fields, such as human gene therapy, offer significant challenges, innovations such as improved gene-splicing and separation and analytical technologies have led to the manufacture of more highly purified drugs — especially vaccines, hormones, and antibody preparations — that are less problematic for regulators.

The FDA's “cover” for these ill-advised innovations is that they are a response to a report on drug safety published last fall by the quasi-governmental Institute of Medicine. However, the IOM's deeply flawed, one-sided analysis — bought and paid for by the FDA, not coincidentally — will remedy few, if any, of the FDA's shortcomings. In fact, many of the recommendations would make the agency even more risk-averse, reduce further the number of drugs emerging from the research pipeline, and compromise public health.

Neither Congress nor the FDA (nor the IOM) is willing to admit that the agency's most significant problems are mismanagement and excessive risk-aversion. It is much easier to conclude that there is insufficient regulation and to throw more resources at the problem. (Recall economist Milton Friedman's wry observation that only government responds to a failed program by expanding it.) Meanwhile, regulators keep raising the bar for approval, especially for innovative, high-tech products. The FDA is requiring ever larger numbers of patients in clinical trials, its demands for post-marketing clinical trials have proliferated wildly, and “risk management” plans for newly approved drugs are punitive and have been inconsistently applied.

**POLITICAL WINDS** Historically, the pendulum has swung back and forth about what kinds of problems predominate in the regulation of drug development. Thirty years ago, the concerns were primarily about “drug lag” — indolent reviews and approvals by the FDA that put Americans at a disadvantage to consumers in other countries. But in recent years, there have been repeated accusations about what might be called “drug leap” — a supposedly “too cozy” relationship between regulators and industry, and too little attention paid to drug safety, possibly as the result of regulators’ struggling to meet arbitrary deadlines. No longer are federal regulators called to account for the unnecessary deaths of patients who do not get the new drugs they need in a timely way.

The FDA’s recent attempts to convince its critics that it takes drug safety seriously have been unnecessary, unseemly, and unsuccessful. No one who is familiar with the FDA culture and mindset could possibly doubt that drug safety is paramount — if for no other reason than because approving a product that proves to be dangerous can ruin a government career.

The FDA has once again become a reed in the political winds, fanned by many influential leaders of Congress. Given the pro-regulatory leanings of many of the new committee chairmen, including Sen. Ted Kennedy (D-Mass.), Rep. John Dingell (D-Mich.), and Rep. Henry Waxman (D-Calif.), hearings and new lawmaking will focus on alleged under-regulation and the need for additional power and resources for the FDA. The agency will be encouraged to regulate more aggressively and punitively, and will be only too happy to comply. User-fees on drug companies — another name for a discriminatory tax on a single industrial sector — will likely be increased.

Two bills — undoubtedly the harbinger of things to come — were introduced in the Senate in February (see Box). Senators Kennedy and Michael Enzi (R-Wyo.), the chairman and ranking Republican, respectively, of the Health, Education, Labor, and Pensions Committee, proposed legislation that would grant the FDA new authority to impose safety requirements on medicines after they have been approved for marketing. The legislation would also require registration of clinical trials and the reporting of their results in public databases. In addition, Sen. Chris Dodd (D-Conn.) and Sen. Charles Grassley (R-Iowa) introduced legislation that would create within the FDA a center to oversee the safety of drugs after they go on the market.

These bills are the culmination of years of drug company-bashing by a small number of activists and members of Congress who have seized on high-profile events such as deficiencies in the labeling of antidepressants and the discovery of previously unknown side effects of various widely used drugs. They will discourage drug development by making it more difficult and expensive, at a time when an aging American population desperately needs new and improved (and cheaper) medicines, and when pharmaceutical research is already ailing.

**CHERRY-PICKING** The FDA is already the nation’s most powerful and omnipresent regulator. The Kennedy-Enzi bill would grant it new authority, supposedly to ensure the safety of drugs, and would require drug approvals to be accompanied by post-marketing risk evaluation and mitigation strategies

(REMS) that are intended to help firms and regulators assess post-marketing adverse-event reports and communicate risk information to the public. REMS could include mandatory post-marketing safety studies, restrictions on which providers can prescribe or dispense a drug, and limitations on direct-to-consumer advertising

But the FDA already has the authority to require REMS as well as detailed Risk Management Actions Plans (RiskMAPs) when regulators feel that they are necessary. It is revealing that RiskMAPs have been overused and abused: at times the exhaustive (and exhausting) list of requirements for physicians, pharmacists, and patients seems more appropriate for weapons-grade plutonium than a pharmaceutical. Some RiskMAPs have contained requirements such as mandatory enrollment in patient registries, limited distribution, and pre-

## Upcoming FDA Bills:

### “Enhancing Drug Safety and Innovation Act of 2007” (Enzi-Kennedy Bill), S. 484:

- Provides additional resources for the FDA’s drug safety office and makes it organizationally independent of the agency’s drug-approval function.
- Enables the FDA to require clinical trials.
- Requires drug approvals to be accompanied by post-marketing risk evaluation and mitigation strategies (REMS) that are intended to help firms and regulators assess post-marketing adverse-event reports and communicate risk information to the public; REMS could include mandatory post-marketing safety studies, restrictions on which providers can prescribe or dispense a drug, and limitations on direct-to-consumer advertising.
- REMS may require drug companies to develop medication guides for distribution when a drug is dispensed, patient package inserts, and plans for disseminating risk information to health care providers.
- Under REMS, pharmaceutical firms may also be required to conduct post-marketing (Phase 4) trials.
- Creates an institute that would identify new tools for biomedical research.
- Requires all clinical trials to be registered and their results stored in a public database.

### “Enhancing Drug Safety and Innovation Act of 2007” (Waxman-Markey Bill), H.R. 1561:

- The companion bill to the Senate’s Enzi-Kennedy Bill (S. 484), with similar provisions.

### “Fair Access to Clinical Trials Act” (Dodd-Grassley Bill), S. 467:

- Gives FDA more power to require that manufacturers conduct post-marketing surveillance and other measures related to the safety of newly approved drugs.
- Creates a new organizational entity within the FDA to oversee post-approval drug safety that would report directly to the FDA commissioner.

scribed patient behavior (such as the use of two kinds of contraception, in the case of one drug).

The requirement that drug companies disclose advanced clinical trials in a public database is based on concerns that “negative” results are often obscured or simply not reported. It is intended to prevent companies from “cherry-picking” studies, divulging only those that yield favorable results and suppressing the rest. Those concerns are exaggerated. Nothing in our society is currently more stringently regulated and monitored than drug development. During each phase of clinical testing, the FDA reviews and must grant permission for every clinical trial, and has access to all of the proprietary information about the drug. When the manufacturer has accumulated evidence that the drug is safe and effective, as part of the application for marketing approval, the results of every trial and everything else that is known about the drug (both in the United States and abroad) must be reported to the FDA. Statistical analysis must be performed in an appropriate and pre-specified manner. Moreover, the FDA serves as a repository for data on similar drugs made by other manufacturers. All of this prevents statistical “cherry-picking” or “data mining” that could mislead regulators.

Clinical trials databases are useful to individual patients who want to know if they are eligible for a clinical trial that is under way — a function already served by *www.clinicaltrials.gov*. But, except for offering a bonanza to plaintiffs’ attorneys trolling for business, the benefits of a publicly available database of clinical trial results are dubious.

There is also the question of the meaning of “negative results” in clinical trials. In the context of scientific and clinical

experiments, the term has a meaning very different from the common usage. Such trials are seldom “negative” in the sense of revealing that the drug being tested inflicts harm; rather, the term typically connotes that the tested drug may not be useful or applicable to the indications (uses) for which approval is being sought. The reasons can include: insufficient statistical power (that is, number of patients) in the study; inappropriate choice of route, dose or frequency of administration, or in the stratification of subjects; or simply a failure of the drug to be effective for the indication for which it was tried.

The Dodd-Grassley proposal is even worse. It would create within the FDA an anti-drug entity with strong incentives to argue for the non-approval or market withdrawal of drugs that have significant side effects even if they offer huge net benefits. (We have seen this already from certain factions within the agency.)

These proposed legislative remedies for the FDA’s problems, with more planned for later in the year in both the House and Senate, are analogous to the discredited medical practice of bleeding the patient with leeches. By intensifying the FDA’s notorious risk aversion, the new measures will inflate even further the costs, difficulty, and uncertainty of drug development and reduce the number of drug candidates that begin and complete clinical testing. They will drain the life’s blood from innovation and inflict harm on patients. If these pieces of legislation are enacted, they will validate yet again Will Rogers’s quip about Congress: “Every time they make a joke, it’s a law. And every time they make a law, it’s a joke.” As usual, the joke will be on us. **R**

# Evolution and Envy

BY PAUL H. RUBIN

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**I**t is impossible to pick up a newspaper today without reading about increasing income inequality. Even in the *Wall Street Journal*, through February 26 of this year, a search shows 47 articles — about one per publishing day — dealing with the issue. Congress is concerned and various bills addressing the “problem” of unequal distribution and “excessive” executive compensation are being debated.

It is reasonable for a society to care about the incomes of the poor — a social safety net of some sort is not the issue here. Rather, the question is why we are so concerned that some members of our society are exceptionally well off. Why do we believe there is a “problem of the rich” that goes along with the problem of the poor?

**CEO SALARIES** Economic theory teaches us that, in general, earnings are closely related to marginal productivity. That

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is, if corporate officers are making big piles of money, it would in general be because they are productive. For a major firm in a global economy, it does not take much of an increase in firm earnings to explain an astronomical salary for the CEO who produced the increase. If public policies inefficiently restrict such earnings, incentives for increased productivity will be diminished and the overall economy could suffer.

But even if high corporate salaries are not due to productivity, so what? Salaries are ultimately paid by stockholders. If they do not like the level of salaries of their CEOs, they have remedies such as selling the stock. Public policy might try to increase the competitiveness of the CEO market by, for example, repealing laws that make corporate takeovers more difficult, but there is no value and much danger in interfering with earnings markets directly.

Moreover, of course, there is no place in an economy where the level of inequality is set. Rather, there are numerous markets that establish pay levels for various jobs and skills, and the level of inequality is a result of those independent deci-

sions. Just as economists long ago realized that there is no such thing as a “just” price, so there is no such thing as a “correct” level of inequality in an economy.

**HARD-WIRED ATTITUDES** Nonetheless, voters (and therefore politicians) are concerned with this issue. Our attitude toward income inequality is at least in part hard-wired.

Evolutionary psychologists and others who study the relationship between our evolutionary history and current attitudes and behaviors understand that this history is directly relevant to understanding our innate character and nature. This work is crucial for understanding activities such as gender differences in courtship behavior. It is increasingly being used to examine moral and political attitudes.

To say that an attitude or preference is hard-wired does not mean that it is unchangeable. We humans are smart



and we can learn to change our preferences or behaviors. For example, if we did not work at it, we would all eat too much sugar and fat because, in the evolutionary environment, those foods were valuable and led to increased survival. Individuals who consumed such foods were more likely to survive and become our ancestors, and pass along preferences for those foods. But we can learn not to indulge our innate desires. Similarly, we can learn that certain political attitudes are counterproductive and we can change them. However, the process is made easier if we understand the nature and source of the preferences.

**INEQUALITY** During most of our existence as humans and all of our existence before that, our ancestors lived in a vastly different social and economic environment from that of modern times. They were hunters and gathers, and they lived in relatively small social groups such that everyone knew everyone else. We were never solitary individuals, but even in groups there were great dangers and risks, including risks of

starvation. Hunting is a highly uncertain enterprise, and even good hunters could fail on a given day. There was little technical or economic change; each person was born and died in the same economy.

This set of factors had several implications. First, the economy was a sharing economy. A hunter who was successful could not consume all of his prey, and would share with those less successful — in part because the tables might be turned next week. Second, because there was no technical innovation and virtually no savings or capital, the economy was approximately zero sum — there was no way of increasing social wealth other than perhaps putting forth more effort. Third, our ancestors were polygamous — more powerful or more successful males had more than one mate, and so the less successful had none. Polygamy was a powerful force among our ancestors, and those males who lacked a mate did not in fact become our ancestors.

Those factors created great pressures for equality and for dislike — envy — of those who were more successful. Someone who had more than others probably was failing in his duty to share. His additional wealth came from shirking rather than from any increase in productivity. Moreover, the additional wealth translated into more mates for some and no mates for others. For those reasons, anthropologists have found that in hunter-gatherer societies there is pressure against those who are viewed as “upstarts,” and those individuals are commonly punished or avoided.

**THEN AND NOW** Conditions are vastly different today. We have institutionalized redistribution through various forms of welfare so that high earners pay their share through taxes. We do not live in a zero sum society, so cleverer and more productive people can undertake socially useful activities that make all of us wealthier and better off, even if those activities make some people very rich. We no longer live in a world of polygamy (at least in the West) and so there should be no fear that the successful will obtain too many women. Indeed, if this is a concern, we should care more about rock stars and movie actors than about CEOs.

We have a natural tendency to favor members of our in-group, and this can easily translate into preferences for protectionism in the international economy. But economists have taught that trade is beneficial for all, and so we have seen a progressive fall in trade barriers over time. Similarly, we can learn that inequality is due to productivity differences, and that we all benefit from those differences and the incentives they create.

This lesson must be learned; it does not come naturally to us. Moreover, just as protectionist pressures resurface from time to time, so pressures for inefficient income leveling will also arise periodically. We must be vigilant to counter those demands when they do arise. If we do not resist those forces, the result can be a poorer and less efficient economy because incentives for productivity-increasing activities will be reduced. We can do a better job of resisting those pressures if we understand their source and realize that what was desirable policy in the evolutionary environment is not so desirable now. **R**