The NBER Digest

NATIONAL BUREAU OF ECONOMIC RESEARCH

May 2010

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Calorie Posting in Chain Restaurants

Nutrition labeling on packaged food has been mandatory in the United States since the early 1990s, and printing tiny lists on cans and bags has long been accepted practice. Yet, in spite of this improvement in providing information, the share of Americans who are obese has continued to rise, increasing from 15.9 percent in 1995 to 26.6 percent in 2008.

The fraction of calories consumed in restaurants also has risen in recent years. In 2008, New York City extended nutrition labeling to chain restaurants, requiring them to post clearly the number of calories in every one of their foods and beverages. In March 2010, new federal health care legislation mandated calorie posting for chain restaurants nationwide beginning in 2011. Will these point-of-purchase postings have any public health effect? Could menus with "350 calories" printed beside "eight grain roll" drive a consumer to buy a banana (100 calories) instead?

In **Calorie Posting in Chain Restaurants** (NBER Working Paper No. 15648), study authors **Bryan Bollinger, Phillip Leslie**, and **Alan Sorensen** ask whether mandatory calorie posting influences consumers' purchase decisions. They use detailed data from Starbucks stores in New York City, where calories are posted; from Starbucks in Boston and Philadelphia, where calories are not posted; and from Starbucks stores throughout the nation. The researchers find that mandatory calorie posting influenced consumer behavior at Starbucks in New York City, causing average calories per transaction to drop by 6 percent (from 247 to 232 calories). They also find that these effects are long lasting: after the posting began, the calorie reduction persisted for at least 10 months (the duration of the sample period). There is also evidence of persistent learning effects: commuters who lowered their calories per transaction on weekdays in New York City also lowered them in transactions at Starbucks outside the city, where calories were not posted.

> "Mandatory calorie posting influenced consumer behavior at Starbucks in New York City, causing average calories per transaction to drop by 6 percent."

The researchers also find that almost all of the calorie-reduction effects in Starbucks are related to food — not beverage — purchases. Following calorie posting, average food calories per transaction fell by 14 percent. The effect is larger for high-calorie consumers: individuals who averaged more than 250 calories per transaction reacted to calorie posting by decreasing calories per transaction by 26 percent — dramatically more than the 6 percent average reduction for all consumers.

Beverage consumption was largely unaffected by calorie posting. Consumers tended to underestimate the calories contained in Starbucks' food and bakery items, but they overestimated the calories contained in Starbucks beverages. According to the researchers, consumers who discovered by calorie posting that an Iced Café Latte contains just 130 calories were pleasantly surprised — and continued buying.

Noting that calorie reductions on the order of 6 percent at chain restaurants would yield only modest decreases in body weight, the researchers suggest that the direct effect of calorie posting on U.S. obesity may be small. The most meaningful effect of the calorie posting law may be its long-run impact on menu choices, as restaurants will have an economic incentive to offer low-calorie options. The new policy may also benefit public health as consumers grow accustomed to counting calories and choose or demand healthier foods.

The study also explores how calorie posting affected corporate profits. The authors find that it did not cause any significant change in Starbucks' overall revenue. At Starbucks stores located within 100 meters of a Dunkin Donuts store, revenue actually increased by 3 percent — suggesting that calorie posting may have caused some consumers to substitute away from Dunkin Donuts toward Starbucks.

— Sarah H. Wright

Securitization in the 1920s

The financial innovations that propelled the boom and collapse of the commercial real estate securities market in the last decade parallel those of that same market in the 1920s. Issuance of commercial mortgage-backed securities financed the construction of most of the U.S. skyscrapers in the 1920 and led to overbuilding and then widespread vacancies. The price declines in the mortgage-backed securities market in the late 1920s preceded the crash of the equity markets and the start of the Great Depression. Analyzing the events of the earlier crisis can provide insights to regulators and financial institutions struggling with solutions to the current one, according to **William Goetzmann** and **Frank Newman**, co-authors of **Securitization in the 1920s** (NBER Working Paper No. 15650).

The authors observe that "by nearly every measure, real estate securities were as toxic in the 1930s as they are now." Widespread economic optimism after World War I fueled demand for office space, boosting average commercial rents nationally 168 percent from a pre-war base through 1924. That kicked off a speculative commercial real estate construction boom not matched until the mid-2000s.

"Real estate bond issuance, which accounted for nearly 23 percent of all corporate debt issued in 1925, fell to just 0.14 percent of the debt market by 1934 and some days no bonds traded. The real estate bond market soon vanished."

New York and Chicago were the primary focus of the real estate run-up. More office buildings taller than 70 meters were constructed in New York between 1922 and 1931 than in any other ten-year period before or since, according to the authors' research. "These 235 tall buildings represented more than an architectural movement; they were largely the manifestation of a widespread financial phenomenon." That is, the speculative construction meant building for the express purpose of maximizing rents in buildings with multiple tenants in order to turn a profit. Before that time, office buildings were financed and built by companies primarily for their own use.

In order to feed the demand for capital to finance construction, bond sellers courted retail investors, selling them shares in these commercial ventures as well as bonds backed by the properties — a precursor to the modern markets' complex forms of securitization. Previously, only institutional investors, such as banks and insurance companies, were the sources of such funds.

Demand was such that a real estate securities exchange was created in 1929 and commercial mort-

gage-backed securities quickly grew into one of the largest classes of investment assets of the 1920s, raising more than $4.1 billion from 1,090 bond offerings between 1919 and 1931. Among the reasons for this rapid growth was the presence of small investors who, it turned out, relied on poorly supported assertions of asset value provided by a few large intermediaries in a market with little centralization or regulatory oversight. "The public was the obvious but critical third party in the real estate securities boom of the 1920s," Goetzmann and Newman write. "It is not clear whether building companies viewed the public as an attractive (if ignorant) source of capital or as a lender of last resort. Anecdotal evidence suggests the latter, as do the empirical results of this study."

At the market's peak in May 1928, bonds sold at 100.10, a premium versus par, according to a commercial mortgage price index the authors created to track the coupon yield spreads on real estate bonds for the decade 1926–35. But rampant development based on easy access to capital led to massive overbuilding and then empty structures, which eventually led to defaults and finally a widespread collapse in bond prices.

Significantly widening yield spreads on real estate bonds versus Treasuries began in December 1928, nearly a year before the stock market collapsed in October 1929. By April 1933, bond prices fell to a low of 24.75 cents on the dollar. And by 1936, at least 80 percent of the outstanding securities issued between 1920 and 1929 were failing to meet their contracts, resulting in widespread defaults. Recoverable value on those same issues ranged from approximately 80 percent for 1920-vintage bonds to less than 40 percent for 1928-vintage bonds.

Real estate bond issuance, which accounted for nearly 23 percent of all corporate debt issued in 1925, fell to just 0.14 percent of the debt market by 1934 and some days no bonds traded. The real estate bond market soon vanished, as did many of the bond houses that created them, among them many of the most trusted names on Wall Street. That was followed by public outrage over institutional corruption.

"Ultimately, the size, scope and complexity of the 1920s real estate market undermined its merits, causing a crash not unlike the one underpinning the nation's current financial crisis, due in part to a commercial construction boom matched only in the mid-2000s," the authors say. "These analyses allow us to conclude that publicly-issued real estate securities affected real construction activity in the 1920s and that the breakdown in their valuation, through the mechanism of the collateral cycle, may have led to the subsequent stock market crash of 1929–30."

— Frank Byrt

Elected Versus Appointed Policymakers

How cities pick their treasurers — whether by elections or through appointments — can have an impact on their cost of borrowing. In California, cities that appoint treasurers spend 13 to 23 percent less in borrowing costs than comparable cities with elected treasurers, according to **Elected Versus Appointed Policymakers: Evidence from City Treasurers** (NBER Working Paper No. 15643). Were all California cities with elected treasurers to replace them with appointed ones, they could save more than $20 million collectively, author **Alexander Whalley** estimates.

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Previous studies of whether elected officials or bureaucrats do

a better job at controlling borrowing costs have produced mixed results. In fact, the most compelling empirical research suggests that elected electricity regulators choose lower prices than appointed regulators, and that elected judges are more encouraging toward employment-discrimination lawsuits than appointed judges. But using real-world data to prove a causal relationship is difficult, because so many other factors beyond the method of selecting public officials may play a role.

In this study's sample of 203 California cities between 1995 and 2006, for example, it is relatively easy to see that cities with elected treasurers paid 15 percent more to borrow money than cities with appointed treasurers. But the cities with elected treasurers also had more debt on average, were more likely to have directly elected mayors and clerks, and had lower per capita income and a less educated population — all of which could also influence borrowing costs. Controlling for those factors, cities with appointed treasurers paid 13 percent less to borrow than cities with elected treasurers.

To get at the issue of causality, this study further refines the sample to examine the 31 cities that held a referendum during the period to replace an elected treasurer with an appointed one. Ten cities approved such a change. Whalley argues that cities where the referendums either succeeded or failed by a very narrow margin were likely to be quite similar, on average. From that core sample, he finds that cities spend 23 percent less to borrow money if they have an appointed treasurer.

City treasurers can affect a city's borrowing costs in two ways: by issuing new debt and by refinancing existing debt. This study finds little difference between appointed and elected treasurers on the costs of issuing new debt. But on refinancing existing debt — an activity that requires significant skill and expertise — the appointed city treasurers were much better at getting lower interest rates. One reason may be that appointed treasurers often have higher levels of education (often an MBA or MPP degree) than elected treasurers do.

The findings suggest that in some cases, there may be benefits — such as reduced borrowing costs in this case — associated with assigning technical policy-making tasks to appointed officials with specialized expertise. "The results of this study also have broader implications for the organization of public good provision," Whalley concludes. "Efforts to improve governance in developing countries may well be enhanced by emulating the division of policymaking tasks in advanced democracies."

— Laurent Belsie

Responses to Recycling Laws and Bottle Deposits

Plastic water bottles can be disposed of in at least three ways: curbside recycling, returning the bottles for deposits, or simply placing them in with general trash. The decision to recycle is affected by the opportunity cost of one's time and "the warm glow environmental benefit ... that the consumer derives for each bottle recycled whether at the curb or returned for deposit," according to **W. Kip Viscusi, Joel Huber, Jason Bell**, and **Caroline Cecot**, writing in **Discontinuous Behavioral Reponses to Recycling Laws and Plastic Water Bottle Deposits** (NBER Working Paper No. 15585).

> "In states without either stringent recycling laws or bottle deposit laws, respondents recycled 4.4 bottles out of 10. In states with deposit laws and stringent recycling requirements, respondents recycled 8.3 out of 10 bottles."

With the exception of Michigan, where the rate is 10 cents per bottle, states with deposit laws require a 5-cent deposit. The high fixed costs associated with recycling lead to the theoretical conclu-

sion that responses will be discontinuous: that is, people will either recycle almost all of their plastic bottles or almost none of them. Using data from a 2008 web-based survey administered to a nationally representative sample of 2,550 people who were asked "Out of every 10 plastic bottles, how many would you say that you recycled or returned for reuse?" Viscusi and his co-authors confirm that theory with evidence.

On average, the individuals surveyed reported recycling 6 out of 10 plastic bottles. In all, roughly 30 percent of the people in the sample recycled no bottles while 41 percent recycled all bottles. In states without either stringent recycling laws or bottle deposit laws, respondents recycled 4.4 bottles out of 10. In states with stringent recycling, respondents recycled 6.1 out of 10 bottles. In states with deposit laws *and* stringent recycling requirements, respondents recycled 8.3 out of 10 bottles.

The authors conclude that state bottle deposits and recycling laws foster recycling behavior, and that more stringent recycling laws increase recycling rates. On balance, having both deposits and regulations in place increases recycling. The empirical estimates suggest that people living in urban and suburban areas recycle more, as do people living in the Northeast. Concern about the environment and higher incomes increase recycling -- so does increasing age and residence in a larger household.

— Linda Gorman

Vintage Capital and Creditor Protection

It is well established that legal rules designed to protect corporate shareholders and creditors are associated with more developed financial markets and stronger economic growth. Yet most of the research to support this belief has been based on cross-country macroeconomic outcomes, and it was not able to pin down the underlying mechanism through which creditor rights and shareholder protection affect real economic outcomes. In **Vintage Capital and Creditor Protection** (NBER Working Paper No. 15735), **Efraim Benmelech** and **Nittai Bergman** attempt to fill this gap by studying the airline industry, using a sample that includes most of the aircraft in the world (489,916 aircraft-year observations), which covers 5,987 operators in 129 countries over the years 1978–2003.

Benmelech and Bergman find that better creditor rights are associated with aircraft of a younger vintage, newer technology, and firms with larger aircraft fleets. The association between creditor rights and aircraft vintage is concentrated among non-leased commercial aircraft. Airlines with lower leverage ratios and less debt naturally are less sensitive to creditor rights, because they are able to use internal funds rather than external capital to finance investment. In sum, better creditor protection helps airlines to mitigate financial shortfalls and enhances investment in newer, more efficient, and more technologically advanced aircraft.

> "[In an international comparison of airlines and legal systems] better creditor rights are associated with aircraft of a younger vintage [and with] newer technology. "

The authors conclude that their results suggest a broader link — not confined to the airline industry — between investor protection, real corporate investment, and economic growth. They propose that "by mitigating financial shortfalls, enhanced legal protection of creditors facilitates the ability of firms to make large capital investments, adapt advanced technologies, and foster productivity."

— Lester Picker

Modeling College Major Choices

Although various studies have documented differences in earnings across college majors, comparatively little is known about how students choose their major. In **Modeling College Major Choices Using Elicited Measures of Expectations and Counterfactuals** (NBER Working Paper No. 15729), co-authors **Peter Arcidiacono**, **V. Joseph Hotz**, and **Songman Kang** find that both expected future earnings and students' assessments of their own abilities affect their choice of a college major. However, students' forecasts of expected earnings in different majors are often incorrect. This study estimates that 7.5 percent of students would switch majors if they made no such forecast errors.

The data for the study come from a 2009 survey of 173 Duke University male undergraduates. The survey asked students to estimate earnings ten years after graduation in a variety of professions, or for students majoring in particular fields, as well as what the respondent expected to earn in his major and how much his earnings would have to change in order to entice him to switch majors. The students who completed the paid survey were more likely to receive financial aid, major in science, and be of Asian ethnicity than the rest of the Duke male student body.

"Students' forecasts of expected earnings in different majors are often incorrect… 7.5 percent of students would switch majors if they made no such forecast errors."

In modeling students' choices, the authors find that if abilities were assumed to be equal, students would move from the Humanities and the Social Sciences (other than Economics) into Engineering because of the higher expected earnings from an Engineering major. In fact, the share of individuals choosing Natural Science or Engineering Majors increases by 5.5 percent and 10 percent respectively when expected earnings increase by one standard deviation. If expected earnings were equal across all majors, then the students choosing Humanities and Social Science majors would increase by 17 percent and 10 percent respectively, while those choosing Economics majors would fall by 16 percent.

— Linda Gorman

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