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The impact of analyzing economic events on the learning of undergraduate economic theory

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ABSTRACT

We look at the effect of having students read and respond to articles regarding economic events on the learning of economic theory in both Intermediate Microeconomics and Intermediate Macroeconomics. Having students apply theoretical material to real world situations has spillover effects into the learning of theoretical material itself. By assigning articles and measuring performance on midterm exams in four intermediate theory courses during the 2007–2008 academic year, we find that each additional article a student completed resulted in an improvement of approximately two and one-half to three percentage points on that exam.

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1. Introduction

Much of the economics education literature has focused on improving performance and general economic literacy in principles courses. Intermediate theory courses, however, are the basis for field course work and have largely been ignored in these studies. Additionally, while many different studies have been completed on various teaching methods, how we relate the material to current, historical or other economic events has been left relatively under-researched. In a study of students in microeconomic and macroeconomic theory courses, we examine the impact of having students read and respond to articles regarding economic events. In doing so we show how relating real world economic events to the economic theory from Intermediate Microeconomics and Intermediate

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Macroeconomics has spillover effects into the learning of theoretical models. Having students relate current and historical events to economic theory not only allows them to have better economic literacy in general, but significantly improves their ability to solve mathematical models.

Our research follows those who have examined student performance in intermediate theory courses and those who study economic literacy and teaching methods. Katzner (1991) examines the balance between teaching economic theory and teaching mathematical tools in Microeconomic Theory and concludes that the two are best taught when done so in a complementary way. Hansen et al. (2002) look at the level of economic literacy of students who have taken a Principles of Economics course and conclude that this course is generally ineffective at creating retained economic knowledge for students. While we do not examine the level of basic economic knowledge retention, our study does show that adding analysis of world events to a theory course results in better performance on theoretical material. Our course set-up is in many ways similar to that of Greenlaw (2003). He created a writing intensive version of a Principles of Macroeconomics course under the hypothesis that “students learn more from an ‘active learning’ approach, which engages students in ways that lectures often do not.” Like Greenlaw, we find that students learn better when asked to write on a topic and our results extend his findings to include spillover effects into topics not directly covered by the writings. For a list of ideas on how writing can be brought into the economics classroom via short assignments see Crowe and Younga (1986). They advocate against the need to read these assignments as the act of writing is the important part. We follow this advice in our course design. Likewise, Cohen and Spencer (1993) advocate bringing writing into the economics curriculum though they argue for giving students more feedback by creating a “hierarchy of concerns.” We recommend reading their advice for those instructors looking to evaluate their students’ writing. Finally, a working paper by Wargo and Vilceanu (2010) gives background as to a new model of learning and memory retention which suggests results are due to students forming better connections to the material and thus improving their retention of the theory.²

This paper proceeds by describing the course design and methodology for isolating the effect of the article analysis in Section 2. Descriptions of the data with summary statistics are found in Section 3. Empirical results are presented and discussed in Section 4; Section 5 concludes with a summary of results and our recommendations for intermediate course design. Appendices A–C are short appendices with supporting material including assigned article and sample questions.

2. Course design and methodology

Our study of the effectiveness of real world economic analysis on student performance in intermediate economic theory courses was conducted in four classes at the University of Colorado, Boulder during the 2007–2008 academic year. Dean Craig taught one section of Intermediate Microeconomic Theory during both the fall and spring semesters that year and Samuel Raisanen taught one section of Intermediate Macroeconomic Theory during each of those semesters. These three-credit-hour courses both focus on mathematical tools for economic modeling and required mathematics at the multivariate differential calculus level. The course descriptions from the University of Colorado, Boulder course catalog are below³:

ECON 3070 (3): *Intermediate Microeconomic Theory*

Explores theory and application of models of consumer choice, firm and market organization, and general equilibrium. Extensions include intertemporal decisions, decisions under uncertainty, externalities, and strategic interaction.

ECON 3080 (3): *Intermediate Macroeconomic Theory*

Introduces theories of aggregate economic activity including the determination of income, employment, and prices; economic growth; and fluctuations. Macroeconomic policies are explored in both closed and open economy models.

² A summary version of this paper as presented at the AEA National Conference on Teaching Economics, Stanford University, June 1–3, 2011 is available at http://www.economicnetwork.ac.uk/showcase/wargo_forgetting.

³ The 2007–2008 University of Colorado, Boulder course catalog can be accessed at <http://www.colorado.edu/catalog/catalog07-08>.

The Intermediate Microeconomics course was taught using the second edition of *Microeconomics* by Besanko and Braeutigam (2004). The Intermediate Macroeconomics course was taught from the fourth edition of *Macroeconomics* by Blanchard (2005).

In class, two- to three-page articles, often by noted economists, were assigned for reading and written responses. These articles were related to the economic modeling that was being completed in class. Students were asked to write a one-page summary and response to directed questions. For example, after discussing the topics of marginal utility and deadweight loss in Intermediate Microeconomics, the article, “Is Santa a Deadweight Loss?”,⁴ which deals with the possible deadweight loss from gift giving, was assigned. After summarizing the article, students responded to questions such as, “If cash is more valuable than a gift, does that mean we get too many or too few gifts on Christmas?” These article assignments were graded on a credit/no credit basis. For a full list of publicly available articles assigned, please see [Appendix A](#). Additionally, the questions used for four of the assignments are located in [Appendix B](#).

The assignment details from our syllabi were as follows:

Article Analysis Instructions: Over the course of the class we will be analyzing a number of articles related to the material covered. There will be approximately an article per chapter, 12 in all. As an incentive to read the articles' 10% of the grade will be determined by preparing a short summary and answering a few questions for a number of articles. You must do 8 of the 12 articles. I will give a number of questions to consider for each article. Students will be required write a summary of the articles and answer the presented questions in paragraph form, including a second page of relevant graphs if necessary. The article analysis must be one page typed, double spaced, 12 point Times New Roman font, with 1 in. margins to receive credit. The summaries will be credit/no credit and are due in class on the day we discuss the article. I will not accept e-mailed articles as being present for the discussion is part of the assignment. I reserve the right to randomly call on those people who turned in articles to help answer questions to generate discussion.

Isolating the effect of the article analysis on the exams was a primary concern in the design of our courses. In order to identify the effect of the student analysis on exam scores we first obtained variation in the number of articles students completed by breaking the courses into three non-overlapping, five-week sections. An article was assigned during each of the first four weeks of a section. The fifth week was used for a midterm examination over the course material. Each student was only required to complete eight of the 12 article analysis assignments. The article assignment was mandatory and constituted 10% of each student's final course grade. This course design results in students completing anywhere from zero to four article assignments in a given section.⁵ As such, we can identify the effect of completing article assignments on exam scores for the second section of the class alone. The concern in using the first or third sections is that better students are more likely to front-load their work, while worse student will tend to procrastinate.⁶ This would bias the effect of articles completed for exam results on these exams. The second exam however would have both types of students completing articles. Credit was only given for eight articles, therefore the number of articles a student completed during the various five-week periods changes.

Next, to ensure that the completion of the articles did not have a direct effect on the exam grades, the exams did not include any questions on the current or historical events presented in the articles. Our goal here was to avoid the problem of having additional effort on articles effectively being additional studying for exams. See [Appendix C](#) for a sample question from each course. We only tested students on the mathematical economic theory and modeling. Finally, demographic and academic

⁴ “Is Santa a Deadweight Loss?” published in *The Economist*, December 20, 2001.

⁵ To be clear when we use the phrase second section of the course we are referring to the second 5-week third of the class not the second offering of the class. Articles were assigned for all semesters the courses were taught.

⁶ This observation is borne out by our data which shows correlation coefficients between articles completed in a given section and college GPA of 0.254 for <***>section one, <***>.087 for <***>section two, and -0.072 <***>for section three.

information about the students was collected at the beginning of the semester and used as a control. Problem set grades, while part of the class and important for exam preparation were excluded because they were not necessarily indicative of effort.⁷ There is a concern that the effect we observe is driven by additional time spent studying and not by the students' relating of theoretical material to real world applications. It is the opinion of the authors that the additional effort effect of completing article assignments is minor due to two factors: first, the material covered in the article analyses is not covered on the exams and second, the time students spent on the articles is small relative to the amount of time spent on the course as a whole.

3. Data and empirical analysis

3.1. Data

Our data set is cross sectional observations of student performance. We have 174 students in the sample representing two courses and two semesters for a total of four individual classes. All students took the second exam during the period, and we have complete data on all students, giving us a total of 174 observations.⁸ These observations come from courses taught by the authors in the fall of 2007 and the spring of 2008 at the University of Colorado, Boulder. The data was supplemented by surveys completed by the students and additional available student data from the university. Our unit of observation is the student *EXAM* measured in percentage points (e.g. 85 is an 85%). We measured outside learning through emotional connections using the variable *ARTICLES SECOND*, which is the number of article assignments completed in the second period of the course just prior to the second exam. The minimum completed during the second exam period is zero with the maximum being four. We controlled for student gender using the variable *FEMALE*, which is equal to one when the student is female and zero otherwise. Additionally, we include *MAX SAT*⁹ to control for student ability. Because students came into the class with differing economic knowledge, all students were given a pretest and the variable *PRETEST*¹⁰ was created as a control. Information on student major was available and was categorized into four dummy categories: *ECON MAJOR* (dummy equal to one if the student was an economics major and zero otherwise), *HARD SCIENCE MAJOR* (dummy equal to one if the student was a hard sciences major such as engineering or physics and zero otherwise), *BUSINESS MAJOR* (dummy equal to one if the student was a business major and zero otherwise), and finally *OTHER MAJOR* (dummy equal to one if the student did not have a previously mentioned major and zero otherwise). We used *GPA*, which is the student's college GPA before taking the class, to control for effort and ability in college.¹¹ To control for differences between in-state students and out-of-state students, we included *RESIDENT* which is a dummy variable equal to one if the student is a resident of the state of Colorado and zero otherwise.¹² Because many students had commitments outside of scholarly activities we included *HOURS OUTSIDE* which is the approximate number of hours that the student expected to spend either working a job for pay or engaged in school related activities not related to coursework. To control for the fact that some students are more academically motivated we included *ARTICLES FIRST*, which is the number of articles completed by the student prior to the first exam. Lastly, we controlled for

⁷ Because problem sets were used for previous semesters, answers may have been available to some students.

⁸ Approximately five students were dropped from the sample set due to missing one of the three exams. Additionally, there were eight students for whom SAT or ACT equivalent scores were unattainable.

⁹ For any student who did not take the SAT but rather took the ACT, a conversion was made using conventional conversion tables. In addition, if a student took both standardized tests, the maximum based on ACT conversion was used. For more information please contact the authors.

¹⁰ A pretest was given in each class to account for economic knowledge relevant to the course at the time of entry. The score is out of 100.

¹¹ There were five students who took two classes in the sample, either due to failing one course and repeating it or passing and then taking the next class in the series. Eliminating these students does not change our results, and therefore we conclude the endogenous effect on GPA to be minimal.

¹² Students with in-state residency may be different from those who are classified as out-of-state in terms of academic ability due to differences in admission standards for the two groups. In-state residents constituted 63.4% of our sample.

Table 1
Variable descriptions.

Variable	Description
<i>EXAM</i>	Student's exam score out of 100.
<i>ARTICLES SECOND</i>	Number of articles completed for the second section.
<i>ARTICLES FIRST</i>	Number of articles completed for the first section.
<i>PRETEST</i>	Student's score on pretest administered at the beginning of the course out of 100.
<i>GPA</i>	College GPA at start of course.
<i>MAX SAT</i>	Maximum SAT score. If student took ACT only, scores were converted. If student took both, the maximum was used.
<i>HOURS OUTSIDE</i>	Combined hours working for pay or extracurricular activities.
<i>FEMALE</i>	Dummy variable equal to one if the student is female and zero otherwise.
<i>ECON MAJOR</i>	Dummy variable equal to one if student was an economics major at start of course and zero otherwise.
<i>HARD SCIENCES MAJOR</i>	Dummy variable equal to one if student was a hard science major at start of course (for instance engineering, physics, math, etc.) and zero otherwise.
<i>BUSINESS MAJOR</i>	Dummy variable equal to one if student was a business major at start of course (including finance, etc.) and zero otherwise.
<i>OTHER MAJOR</i>	Dummy variable equal to one if student was a major other than economics, business or hard sciences at start of course and zero otherwise.
<i>MICRO</i>	Dummy variable equal to one if the student was taking Intermediate Microeconomics and zero otherwise.
<i>RESIDENT</i>	Dummy variable equal to one if the student is a Colorado in-state resident and zero otherwise.

differences in *EXAM* by student identified ethnicity and parental ability by including a vector of controls for ethnicity and mother and father's highest educational attainment using standard census categories.¹³ A full description of all relevant variables can be found listed in [Table 1](#).

3.2. Summary statistics and anecdotal evidence

Summary statistics are presented in [Table 2](#). Highlighting some of our summary statistics, we see that the average exam score is approximately 65, ranging from a minimum of 10 to a maximum of 101.¹⁴ Students completed approximately 2.8 articles per exam period on average, doing as few as zero and as many as four with all possible numbers in between represented. Students had previously completed approximately 2.6 articles again ranging from zero to four. The average student has a 2.6 GPA, scored a combined 1200 on the SAT, and spends 15 h per week employed or engaged in other extracurricular activities not related to coursework. In addition, while most of our students were male, this is also common in economics departments throughout the world and reflects typical enrollment for upper division economics courses at the University of Colorado, Boulder.¹⁵ Our sample consists of approximately 50% economics majors, 25% either hard sciences or business majors, 25% some other major. This is within the range we would expect given both courses were a requirement for an economics major, multiple business majors, and some political science majors. Our sample includes approximately twice as many residents as non-residents, which is common for a state-sponsored university.¹⁶ Lastly, while not listed in [Table 2](#), approximately 56% of our students took the Intermediate Macroeconomics course with Samuel Raisanen, and 43% took the Intermediate Microeconomics course with Dean Craig. Enrollment is predetermined for these courses at the university: Intermediate Microeconomics was capped at 47 students while Intermediate Macroeconomics enrollment was capped at 60 for the fall of 2007 and 65 in the spring of 2008.

¹³ Summary statistics for these demographic variables are available upon request. The demographics are consistent with course averages at the University of Colorado, Boulder during the relevant timeframe. See CU-Boulder Enrollment Snapshot Fall 06 vs. Fall 07: <http://www.colorado.edu/pba/records/snap/077067/snappage1.htm> for more information.

¹⁴ Extra credit was available on one of the Micro exams resulting in a score over 100.

¹⁵ CU-Boulder Enrollment Snapshot Fall 06 vs. Fall 07: <http://www.colorado.edu/pba/records/snap/077067/snappage1.htm>.

¹⁶ CU-Boulder Enrollment Snapshot Fall 06 vs. Fall 07: <http://www.colorado.edu/pba/records/snap/077067/snappage1.htm>.

Table 2
Summary statistics.

Variable	Mean	Max	Min	S.D.
EXAM	65.25	101	10	16.76
ARTICLES SECOND	2.71	4	0	0.94
ARTICLES FIRST	2.63	4	0	1.09
PRETEST	38.75	100	0	20.47
GPA	2.83	3.90	0	0.56
MAX SAT	1193.05	1550.00	775	140.35
HOURS OUTSIDE	15.42	50.00	0	12.16
FEMALE	0.21	1	0	0.41
ECON MAJOR	0.50	1	0	0.50
HARD SCIENCES MAJOR	0.10	1	0	0.31
BUSINESS MAJOR	0.13	1	0	0.33
OTHER MAJOR	0.27	1	0	0.44
MICRO	0.43	1	0	0.50
RESIDENT	0.63	1	0	0.48

Notes: number of observations is 174. S.D. is standard deviation.

In order to give a preliminary look at our findings we have standardized exam scores by breaking them down by the exam and the number of articles completed for that exam period.¹⁷ These results are reported in Table 3. For the second exam, we see very strong support of the alternative hypothesis that additional articles increased exam scores. Note that each additional article is associated with a higher standardized average.

3.3. Empirical analysis

We employ a reduced form model to estimate the effect of completing additional article assignments on exam scores. We regress exam score of student i in class c in percentage points on the number of articles completed using the following specification:

$$EXAM_{ic} = \alpha_c + \beta_1 ARTICLES\ SECOND_{ic} + \beta_2 ARTICLES\ FIRST_{ic} + \beta_3 ARTICLES\ SECOND_{ic} \times MICRO_{ic} + \beta_4 X_{ic} + \epsilon_{ic} \quad (1)$$

Notice that in Eq. (1) we include fixed effects for class c . β_4 is a coefficient of vectors on student specific control variables that were discussed above, and ϵ_{ic} are the randomly distributed normal errors. We use ordinary least squares regression to estimate Eq. (1). Our primary hypothesis to be tested is:

- H_0 : completing additional articles does not increase exam score ($\beta_1 = 0$).
 H_A : completing additional articles does increase exam score ($\beta_1 \neq 0$).

A positive coefficient on β_1 supports the alternative hypothesis that completing additional article assignments increases exam scores, while a zero or negative coefficient supports the null hypothesis. Our secondary hypothesis to be tested is:

- H_0 : completing articles in Microeconomics has the same effect as completing articles in Macroeconomics on exam scores ($\beta_4 = 0$).
 H_A : completing articles in Microeconomics has a different effect than completing article in Macroeconomics on exam scores ($\beta_4 \neq 0$).

¹⁷ For each class exam the mean score was subtracted from the student's score and this was then divided by the standard deviation of that class exam.

Table 3

Standardized average scores by number of articles.

ARTICLES SECOND	STANDARDIZED EXAM SCORE
4	0.19
3	0.05
2	−0.04
1	−0.33
0	−1.36

Note: exam scores are the standardized average. $E\left[\frac{EXAM_{ic} - \mu_{EXAM}}{\sigma_{EXAM}} \mid ARTICLES\ SECOND = k\right]$.

A positive coefficient on β_4 supports the alternative hypothesis that completing articles in Microeconomics has a stronger effect than Macroeconomics, while a negative coefficient supports the alternative hypothesis that completing articles in Macroeconomics has a stronger effect than completing articles in Microeconomics. A coefficient of zero on β_4 supports the null hypothesis.

4. Results

Our results for estimating Eq. (1) are listed in Table 4. We include three columns: the first contains fixed effects for class only, hereafter referred to as specification (i); the second includes all controls and fixed effects, hereafter referred to as specification (ii). The final column includes the interaction term of articles and being in Intermediate Microeconomics as opposed to Intermediate Macroeconomics. This is done to investigate whether doing articles has a different affect on Microeconomic and Macroeconomic students hereafter referred to as specification (iii).¹⁸ Several things are of note here. It should be noted that in the interest of space, coefficients on ethnicity, mother's education, and father's education are not included.¹⁹

Our coefficient of interest, *ARTICLES SECOND*, is statistically significant, and allows us to reject the null hypothesis that completing articles has no effect on exam scores at the 5% level. In addition it is practically significant, with the magnitude indicating that the completion of each additional article is associated with an increase in exam score of between 2.7 and 3 points for specifications (i) and (ii). A student that completed all four assignments would score on average, approximately, 12% points higher than a student who was identical in all other respects, but completed no article assignments. *ARTICLES FIRST* is statistically significant in the first specification and just barely statistically insignificant at the 10% level in the second specification. The sign of this coefficient indicates that students who completed more articles in the first section, or “finish-everything-early” students, tend to score higher on exams. We see the fact that the significance drops from specification (i)–(ii) as evidence that our controls for effort and ability are working.²⁰ Having a greater stock of economic knowledge increases your exam score as indicated by the coefficient on *PRETEST*. The coefficient estimate is statistically significant at all conventional levels and implies that one additional point on the pretest is associated with an increase in exam score of approximately 0.2 points. Higher SAT scores increased exam scores, indicating that the inclusion of *MAX SAT* is appropriately controlling for academic and test-taking ability. A student scoring 100 points higher on the SAT would perform on average, 2.6 points higher on the second exam than an identical student in all other aspects. The coefficient on *GPA* is not statistically significant, but has a plausible sign. Work outside of class tends to reduce exam scores but not statistically significantly so, as indicated by the coefficient on *HOURS OUTSIDE*. Hard science majors tend to score better than economics majors, by about six percentage points. Finally, business majors do better in our Intermediate Economic Theory courses than economics majors, while other majors do worse, but not statistically significantly so in either case.²¹

¹⁸ We would like to thank the anonymous referee for this suggestion.

¹⁹ Full results available upon request.

²⁰ Specifications where *ARTICLES FIRST* is not included yield nearly identical results and are available upon request.

²¹ At the University of Colorado, Boulder, a large number of the business school students transfer from other departments and are required to apply to the business school. The minimum GPA for automatic acceptance is a 3.3 resulting in business school students being better prepared than average. In addition, many students who are unable to meet these qualifications, major in economics instead.

Table 4

Estimates of improvement in student scores.

	Specification (i)	Specification (ii)	Specification (iii)
ARTICLES SECOND	3.0392** [1.207]	2.7322** [1.278]	.7854 [3.073]
ARTICLES FIRST	2.9787*** [1.104]	1.6927 [1.080]	0.9949 [1.187]
MICRO			8.9257 [10.098]
MICROARTICLES SECOND [†]			-3.6087 [3.026]
GPA		2.5774 [1.773]	6.5349** [2.679]
MAX SAT		0.0263*** [0.007]	0.0274*** [0.008]
PRETEST		0.1966*** [0.068]	0.0028** [0.001]
HOURS OUTSIDE		-0.0378 [0.088]	0.0473 [0.094]
FEMALE		2.8456 [2.401]	2.9476 [2.503]
HARD SCIENCES MAJOR		6.1706** [3.471]	5.1959 [3.423]
BUSINESS MAJOR		2.3971 [3.065]	2.0635 [3.081]
OTHER MAJOR		-2.3626 [2.709]	-4.1791 [2.781]
RESIDENT		2.7512 [2.174]	2.5495 [2.476]
CONSTANT	48.8270*** [5.334]	5.2380 [10.700]	-3.1515 [14.665]
Semester-course fixed effects	Yes	Yes	Yes
Mother's educational fixed effects	No	Yes	Yes
Father's educational fixed effects	No	Yes	Yes
Observations	174	174	174
R-squared	0.272	0.531	0.576
Adjusted R-squared	0.250	0.444	0.491

Robust standard errors clustered at the student level in parenthesis. Excluded dummy is *ECON MAJOR*.

* Significant at 10%.

** Significant at 5%.

*** Significant at 1%.

Turning our attention to specification (iii) we see that the coefficient on the interaction is negative. This negative coefficient is not statistically significant, so we cannot reject the null hypothesis that having articles in a microeconomics class affects students differently than having articles in a macroeconomics class.

5. Conclusions

We find evidence to support the alternative hypothesis that article analysis assignments incorporating related material outside of the traditionally theoretical course material for intermediate economics courses increase exam scores. We find strong effects on the order of two and one-half to three percentage points higher per article on exam scores. The second exam was chosen for study as it is the least likely to be influenced by outside work ethic and thus the most definitive. We conclude that students are more competent in completing mathematical problems when they are better able to relate the results to a concrete real world example. It is the opinion of the authors that having students complete assignments that require they relate economic models to current and historical events or other economic examples, improves their ability to do the mathematics required to solve theoretical models by providing the inter-connections that lead to higher retention rates. These assignments

should be presented to enable students to apply the economics models to relevant events. Additional course discussion of the assignments will likely strengthen the effects as it provides the instructor a method for further emphasizing the connection between theory and application. Future research will target articles with specific topics to isolate which types are most likely to form strong student attachments to the material, hopefully strengthening the results.

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We would like to thank Scott Savage, Ph.D. for his help in the design of the courses and Blake Redabaugh for compiling our ancillary data.

Appendix A. Topics and list of articles used

A.1. Intermediate Microeconomics

Topic	Article	Author	URL
What is Economics?	The Great Banana Revolution	Steven E. Lansburg	http://www.slate.com/articles/arts/everyday_economics/2002/06/the_great_banana_revolution.html
Economies of Scale	What's Green Is Both New And Old?	Olivier Barbaroux	http://www.forbes.com/2007/07/31/district-energy-veolia-oped-cx_ob_0801district.html
Sunk Costs	Giants Econ 101: Sunk Costs are Irrelevant	The Giants Curmudgeon	http://www.beyondchron.org/news/index.php?itemid=4721
Elasticity	Got Gas?	Paul Roberts	http://www.slate.com/articles/news_and_politics/the_best_policy/2004/05/got_gas.html
Marginal Utility	Is Santa a Deadweight Loss?	The Economist	http://www.economist.com/node/885748
Marginal Product of Labor. Marginal Product of Capital and Isoquants	More Consumers Reach Out to Touch the Screen	Amy Harmon	http://www.nytimes.com/2003/11/17/us/more-consumers-reach-out-to-touch-the-screen.html?pagewanted=all&src=pm
Free Entry Profits	Bubble-lusions	Austan Goolsbee	http://www.slate.com/articles/business/the_dismal_science/2005/08/bubblelusions.html
Supply and Demand under Competition	The Steakhouse Index	Daniel Gross	http://www.slate.com/articles/business/moneybox/2007/05/the_steakhouse_index.html
Income and Substitution	Tortilla Price Hike Hits Mexico's Poorest	John Ward Anderson	http://www.washingtonpost.com/wp-srv/inatl/longterm/mexico/stories/990112.htm
Effects Subsidies	We Bought the Farm	Daniel Gross	http://www.unz.org/Pub/Slate-2004nov-00166
Marginal Utility	Why the Yankees Signing Roger Clemens was a Mistake	Wordsleuth	http://voices.yahoo.com/why-yankees-signing-roger-clemens-was-mistake-380535.html
Monopoly, Monopsony	U.S. Jury Cites Unpaid Work At Wal-Mart	Steven Greenhouse	http://www.nytimes.com/2002/12/20/us/us-jury-cites-unpaid-work-at-wal-mart.html

A.2. Intermediate Macroeconomics

Topic	Article	Author	URL
What is Economics?	The Great Banana Revolution	Steven E. Lansburg	http://www.slate.com/articles/arts/everyday_economics/2002/06/the_great_banana_revolution.html

Appendix A (Continued)

Topic	Article	Author	URL
Unemployment	Odd Jobs	Daniel Gross	http://www.slate.com/articles/business/moneybox/2004/01/odd_jobs.html
Liquidity Trap	Morning in Japan?	Paul Krugman	http://www.slate.com/articles/business/the_dismal_science/1999/03/morning_in_japan.html
Sticky Prices	The Mystery of the 5-Cent Coca-Cola	Tim Hartford	http://www.slate.com/articles/arts/the_undercover_economist/2007/05/the_mystery_of_the_5cent_cocacola.html
IS-LM and Investment	Ants vs. Grass-hoppers	Robert Shapiro	http://www.slate.com/articles/business/the_dismal_science/2002/12/ants_vs_grasshoppers.html
Trade and Investment	Is the U.S. Trade Deficit a Problem?	Greg Mankiw	http://gregmankiw.blogspot.com/2006/03/is-us-trade-deficit-problem.html
Economic Multipliers	WestConn pumps \$213.6M into local economy, study finds	Bob Chuvala	http://www.highbeam.com/doc/1P3-1211829551.html ²²
Inflation and the Philips Curve	Heroes of the zeros	The Economist	http://www.economist.com/node/9972475
Fiscal Policy	Neo-conomists	Daniel Altman	http://www.slate.com/articles/business/the_dismal_science/2004/05/the_neoconomists.html
Fiscal Stimulus	Will Terrorism Resuscitate the U.S. Economy?	Timothy Noah	http://www.slate.com/articles/news_and_politics/chatterbox/2001/09/will_terrorism_resuscitate_the_us_economy.html
Economic Growth	What is the Mother of Invention?	Robert Shapiro	http://www.slate.com/articles/business/the_dismal_science/2002/10/what_is_the_mother_of_invention.html
Rational Expectations	Stop Picking Stocks—Immediately	Henry Blodget	http://www.slate.com/articles/arts/bad_advice/2007/01/stop_picking_stocksimmediately.html

Appendix B. Sample assignments**B.1. Intermediate Microeconomics***Marginal Utility and Consumer Choice Article*

Read the article “Is Santa a Deadweight Loss” (<http://www.economist.com/node/885748>). In one page summarize the article and then address the following questions:

1. Using our “bang for buck” argument what is more valuable to most consumers according to the article, cash or an average gift?
2. If cash is more valuable “bang for buck” does that mean we get too much or too little of the gifts we receive on Christmas? Relate it to the marginal utility we get from the gift.

Elasticity Article

Read the article “The Steakhouse Index” (http://www.slate.com/articles/business/moneybox/2007/05/the_steakhouse_index.html). In one page, summarize the article and then address the questions that follow. Be sure to include any requested graphs on a separate sheet and explain them in your text.

²² Full article requires subscription to site as the article has been archived. A two paragraph preview is available free of charge. A 7-day free trial is available as well.

1. Steakhouses saw increased demand for their steaks. Do you think this caused corn prices to rise? Why or why not?
2. If corn prices did rise due to increased demand, what does this say about the long run market supply curve for steaks at steakhouses? Draw this situation.
3. Did the demand increase cause more firms to enter? Why or why not?
4. Do you think steakhouses are perfectly competitive? Why or why not?

B.2. Intermediate Macroeconomics

US Trade Deficit Article

Read the article “Is the U.S. Trade Deficit a Problem” (<http://gregmankiw.blogspot.com/2006/03/is-us-trade-deficit-problem.html>). In one page summarize the article and then address the following questions.

Recall the open economy Savings=Investment equation: $I = S_{\text{Private}} + S_{\text{Government}} + (IM - X)$ or $I = \text{Net Savings} + \text{Capital Inflow}$ from Chapter 9. Use these equations to address the following questions about the impact of the US trade deficit.

1. Keeping investment constant, explain Ben Bernake's view that excessive foreign savings is leading to a US trade deficit.
2. Why is Paul Krugman worried about capital flight (again the above equation is useful)? What would have to happen for foreigners to stop investing in the United States?
3. Why is Greg Mankiw primarily concerned with the negative US Savings rate (again the above equation is useful)? How does the negative US savings rate impact investment and the trade deficit?

Philips Curve Article

Read the article “Heros of the Zeros” (<http://www.economist.com/node/9972475>). In one page summarize the article and then address the following questions. Be sure to include any requested graphs on a separate sheet and explain them in your text.

1. Explain what changed about the Philips curves between the 1970s and the 1990s. Draw a sample curve for each time period illustrating this change.
2. In which time period was inflation most responsive to a change in unemployment? What on your graph illustrates this? What are possible reasons for this change?
3. Explain what the article means by the sacrifice ratio. How is this illustrated on your graphs?

Appendix C. Sample exam questions

C.1. Intermediate Microeconomics

Sample Exam Question that relates to the Deadweight Loss Article.

1. (11 points of 50 total) Suppose Christina consumes only two goods for lunch in a month; Jimmy John's sandwiches (J) and Half Fast subs (H). Here utility is given by the following function:

$$U(J, H) = J + 4H$$

- a. If Christina has \$60 per month, Jimmy John's sandwiches cost \$2 and Half Fast subs cost \$4, how many subs and how many sandwiches will Christina eat in a month?
- b. Suppose Christina's mom, knowing that Christina likes Jimmy John's, gives her a \$12 gift certificate to Jimmy John's. How many sandwiches and how many subs will Christina consume now?

- c. Could her grandmother have made her just as happy by spending less money? If so how much in cash would her grandmother have needed to give her?

C.2. Intermediate Macroeconomics

Sample Exam Question that relates to the Fiscal Policy.

- 1) (30 points) Use the AS-AD and IS-LM models, starting from the natural level of output, to answer the following questions.
 - a) (6 points) Most Democrats running for the Presidency have claimed that if they were elected they would repeal many of the Bush tax cuts. First, using an AS-AD and IS-LM graph, show what happens in the short run to GDP, the Price Level, and the interest rate. Be sure to label the axes, curves, equilibrium points, and direction of the shifts.
 - b) (6 points) Write out the equations for the AS, AD, IS, and LM curves labeling each one and the direction of the affect of each parameter, i.e. the + and –'s.
 - c) (6 points) Using the equations in part (b) in words explain the effect of repealing the tax cuts on all important variables. Be sure your explanation explains both direction of the change and the reason why in words understandable by a layman (someone not trained in economics or mathematics).
 - d) (6 points) As we move into the medium run, show the effects of repealing the tax cuts on an AS-AD and IS-LM graph.
 - e) (6 points) In words understandable by a layman, explain how the adjustment into the medium run occurs and how it affects all of the relevant variables.

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