Διεθνείς κεφαλαιαγορές και ο πόλεμος του Ιράκ

Πιθανότητες πολέμου
Άποψη των αγορών

- Προκύπτουν από τιμή Χρεόγραφου Σαντάμ (Saddam security)

- Προθεσμιακό συμβόλαιο της μορφής:
  Πληρωμή \$10 αν την ημερομηνία *X* δεν είναι Πρόεδρος του Ιράκ ο Σαντάμ

- ... σε ιστότοπο συναλλαγής στοιχημάτων (betting exchange) www.tradesports.com

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Δεδομένα από χρηματιστήρια

- Κατανόηση οικονομικής διάστασης πολέμου

- Παραπληρωματικά απόψεων ειδικών –
  - Αποκαλύπτουν *πραγματικές* απόψεις
    - «ειδικοί» δεν έχουν συμφέρον πάντα να εκφράζουν τις πραγματικές απόψεις τους
  - *Συναθροίζουν, σταθμίζοντας κατάλληλα*
    - Διαφορετικές απόψεις
    - Συνολικό αντίκτυπο στην οικονομία
      ενώ οι ειδικοί επικεντρώνονται στο ποσοτικοποιήσιμο αντίκτυπο (μικρό κομμάτι του συνολικού)

Άρα μπορούν / πρέπει να επηρεάζουν αποφάσεις μας;

- Πρόταση FutureMAP Defence Advanced Research Projects Agency (*Policy Analysis Market)*
  - "The FutureMAP research project was meant to explore the power of futures markets to predict and thereby prevent terrorist attacks. Futures markets have proven themselves to be good at predicting such things as election results; they are often better than expert opinions"

  - Αποσύρθηκε καλοκαίρι 2003, μία μέρα μετά την πρόταση του

Άλλα σχετιζόμενα ερωτήματα

- Σε τι βαθμό οι κινήσεις των χρηματιστηρίων οφείλονται σε ειδήσεις;

- Κινήσεις δεν συμβαίνουν συγχρόνως με σημαντικά γεγονότα (βλ επόμενους πίνακες).
  - Διάκριση ειδήσεων και γεγονότων;

- Οικονομική σημασία πολιτικών αβεβαιοτήτων και ασφάλιση τους;

- Διάκριση στοιχήματος και επένδυσης (;)

Table 2: Major Events and Changes in the S&P Index, 1941-1987

Event	Date	Percent Change
Japanese bomb Pearl Harbor	Dec. 8, 1941	-4.37%
US declares war against Japan	Dec. 9, 1941	-3.23%
Roosevelt defeats Dewey	Nov. 8, 1944	-0.15%
Roosevelt dies	Apr. 13, 1945	1.07%
Atomic bombs dropped on Japan:		
Hiroshima bomb	Aug. 6, 1945	0.27%
Nagasaki bomb; Russia delcares war	Aug. 9, 1945	1.65%
Japanese surrender	Aug. 17, 1945	-0.54%
Truman defeats Dewey	Nov. 3, 1948	-4.61%
North Korea invades South Korea	June 26, 1950	-5.38%
Truman to send US troops	June 27, 1950	-1.10%
Eisenhower defeats Stevenson	Nov. 5, 1952	0.28%
Eisenhower suffers heart attack	Sep. 26, 1955	-6.62%
Eisenhower defeats Stevenson	Nov. 7, 1956	-1.03%
U-2 shot down; US admits spying	May 9, 1960	0.09%
Kennedy defeats Nixon	Nov. 9, 1960	0.44%
Bay of Pigs invasion announced;	Apr. 17, 1961	0.47%
details released over several days	Apr. 18, 1961	-0.72%
	Apr. 19, 1961	-0.59%
Cuban Missile Crisis begins:		
Kennedy announces Russian buildup	Oct. 23, 1962	-2.67%
Soviet letter stresses peace	Oct. 24, 1962	3.22%
Formula to end dispute reached	Oct. 29, 1962	2.16%
Kennedy assassinated;	Nov. 22, 1963	-2.81%
Orderly transfer of power to Johnson	Nov. 26, 1963	3.98%
US fires on Vietnamese ship	Aug. 4, 1964	-1.25%
Johnson defeats Goldwater	Nov. 4, 1964	-0.05%
Johnson withdraws from race; halts Vietnamese raids; urges peace talks	Apr. 1, 1968	2.53%
Robert Kennedy assassinated	June 5, 1968	-0.49%
Nixon defeats Humphrey	Nov. 6, 1968	0.16%

Από: Cutler, Poterba and Summers, 1988, *What moves stock prices?*

Event	Date	Percent Change
Nixon imposes price controls, requests Federal tax cut; strengthens dollar	Aug. 16, 1971	3.21%
Nixon defeats McGovern	Nov. 8, 1972	0.55%
Haldeman, Ehrlichman, Dean, resign	Apr. 30, 1973	-0.24%
Dean tells Senate about Nixon cover-up	June 25, 1973	-1.40%
Spiro Agnew resigns	Oct. 10, 1973	-0.83%
Carter defeats Ford	Nov. 3, 1976	-1.14%
Volcker appointed to Fed	July 25, 1979	1.09%
Fed announces major policy changes	Oct. 6, 1979	-1.25%
Soviet Union invades Afghanistan	Dec. 26, 1979	0.11%
Attempt to free Iranian hostages fails	Apr. 26, 1980	0.73%
Reagan defeats Carter	Nov. 5, 1980	1.77%
Reagan shot; NYSE closes early; reopens next day	Mar. 30, 1981 / Mar. 31, 1981	-0.27% / 1.28%
US Marines killed in Lebanon	Oct. 24, 1983	0.02%
US invades Grenada	Oct. 25, 1983	0.29%
Reagan defeats Mondale	Nov. 7, 1984	1.09%
House votes for Tax Reform Act of 1986	Dec. 18, 1985	-0.40%
Chernobyl nuclear reactor meltdown; details released over several days	Apr. 29, 1986 / Apr. 30, 1986	-1.06% / -2.07%
Senate Committee votes for tax reform	May 7, 1986	-0.49%
Greenspan named to replace Volcker	June 2, 1987	-0.47%

Important Events

Average Absolute Return	1.46%
Standard Deviation of Returns	2.08%

All Days Since 1941

Average Absolute Return	0.56%
Standard Deviation of Returns	0.82%

Table 4: Fifty Largest Postwar Movements in S&P Index and Their "Causes"

	Date	Percent Change	New York Times Explanation
1	Oct. 19, 1987	-20.47%	Worry over dollar decline and trade deficit Fear of US not supporting dollar.
2	Oct. 21, 1987	9.10%	Interest rates continue to fall; deficit talks in Washington; bargain hunting.
3	Oct. 26, 1987	-8.28%	Fear of budget deficits; margin calls; reaction to falling foreign stocks
4	Sep. 3, 1946	-6.73%	"...no basic reason for the assault on prices."
5	May 28, 1962	-6.68%	Kennedy forces rollback of steel price hike
6	Sep. 26, 1955	-6.62%	Eisenhower suffers heart attack.
7	Jun. 26, 1950	-5.38%	Outbreak of Korean War.
8	Oct. 20, 1987	5.33%	Investors looking for "quality stocks".
9	Sep. 9, 1946	-5.24%	Labor unrest in maritime and trucking industries.
10	Oct. 16, 1987	-5.16%	Fear of trade deficit; fear of higher interest rates; tension with Iran.
11	May 27, 1970	5.02%	Rumors of change in economic policy. "...th stock surge happened for no fundamental reason."
12	Sep. 11, 1986	-4.81%	Foreign governments refuse to lower interes rates; crackdown on triple witching announced
13	Aug. 17, 1982	4.76%	Interest rates decline.
14	May 29, 1962	4.65%	Optimistic brokerage letters; institutional and corporate buying; suggestions of tax cu
15	Nov. 3, 1948	-4.61%	Truman defeats Dewey.
16	Oct. 9, 1974	4.60%	Ford to reduce inflation and interest rates
17	Feb. 25, 1946	-4.57%	Weakness in economic indicators over past week
18	Oct. 23, 1957	4.49%	Eisenhower urges confidence in economy.

	Date	Percent Change	New York Times Explanation
19	Oct. 29, 1987	4.46%	Deficit reduction talks begin; durable goods orders increase; rallies overseas
20	Nov. 5, 1948	-4.40%	Further reaction to Truman victory over Dewey.
21	Nov. 6, 1946	-4.31%	Profit taking; Republican victories in elections presage deflation
22	Oct. 7, 1974	4.19%	Hopes that President Ford would announce strong anti-inflationary measures
23	Nov. 30, 1987	-4.18%	Fear of dollar fall
24	Jul. 12, 1974	4.08%	Reduction in new loan demands; lower inflation previous month
25	Oct. 15, 1946	4.01%	Meat prices decontrolled; prospects of other decontrols
26	Oct. 25, 1982	-4.00%	Disappointment over Federal Reserve's failure to cut discount rates
27	Nov. 26, 1963	3.98%	Confidence in President Johnson after Kennedy assassination
28	Nov. 1, 1978	3.97%	Steps by Carter to strengthen dollar
29	Oct. 22, 1987	-3.92%	Iranian attack on Kuwaiti oil terminal; fall in markets overseas; analysts predict lower prices
30	Oct. 29, 1974	3.91%	Decline in short term interest rates; ease in future monetary policy; lower oil prices
31	Nov. 3, 1982	3.91%	Relief over small Democratic victories in House
32	Feb. 19, 1946	-3.70%	Fear of wage-price controls lowering corporate profits; labor unrest.
33	Jun. 19, 1950	-3.70%	Korean War continues; fear of long war
34	Nov. 18, 1974	-3.67%	Increase in unemployment rate; delay in coal contract approval; fear of new mid-East war
35	Apr. 22, 1980	3.64%	Fall in short term interest rates; analysts express optimism
36	Oct. 31, 1946	3.63%	Increase in commodity prices; prospects for price decontrol

	Date	Percent Change	New York Times Explanation
37	Jul. 6, 1955	3.57%	Market optimism triggered by GM stock split
38	Jun. 4, 1962	-3.55%	Profit taking; continuation of previous week's decline
39	Aug. 20, 1982	3.54%	Congress passes Reagan tax bill; prime rate falls
40	Dec. 3, 1987	-3.53%	Computerized selling; November retail sales low
41	Sep. 19, 1974	3.50%	Treasury Secretary Simon predicts decline in short term interest rates
42	Dec. 9, 1946	3.44%	Coal strike ends; railroad freight rate increase
43	Jun. 29, 1962	3.44%	"...stock prices advanced strongly chiefly because they had gone down so long and so far that a rally was due."
44	Sep. 5, 1946	3.43%	"Replacement buying" after earlier fall
45	Oct. 20, 1987	3.33%	Dollar stabilizes; increase in prices abroad
46	Jan. 27, 1975	3.27%	IBM wins appeal of antitrust case; short term interest rates decline
47	Oct. 6, 1982	3.27%	Interest rates fall; several large companies announce increase in profits
48	Jul. 19, 1948	-3.26%	Worry over Russian blockade of Berlin; possibility of more price controls
49	Nov. 30, 1982	3.23%	"...analysts were at a loss to explain why the Dow jumped so dramatically in the last two hours..."
50	Oct. 24, 1962	3.22%	Khrushchev promises no rash decisions on Cuban Missile Crisis; calls for US-Soviet summit.

The last column is per the New York Times financial section or front page.

Οικονομικές επιπτώσεις πολέμου
προβλέψεις ειδικών το 2003

Δημοσιονομικό κόστος
- Στρατιωτικό ($22-140 δις, προβλέψιμες αποκλίσεις)
- Ανασυγκρότηση ($106-615 δις ως 2012)

Συνολικό (www.costofwar.com)
- **$172 δισ (22/5/2005)**
- **$278 δις (3/5/2006)**
- **$521 δις (19/5/2008)**
- **$664 δις (30/4/2009)**

Τιμή πετρελαίου

Σενάρια για 2004
1. Χωρίς πόλεμο, $18-24
2. **Εύκολος πόλεμος, $22**
3. Γρήγορος πόλεμος με μεγάλες απώλειες, $30
4. Χημική επίθεση Ιράκ σε Ισραήλ, $40

Πραγματικότητα
~$48 (22/5/2005)

> $70 (3/5/2006)

>$50 (30/4/2009)
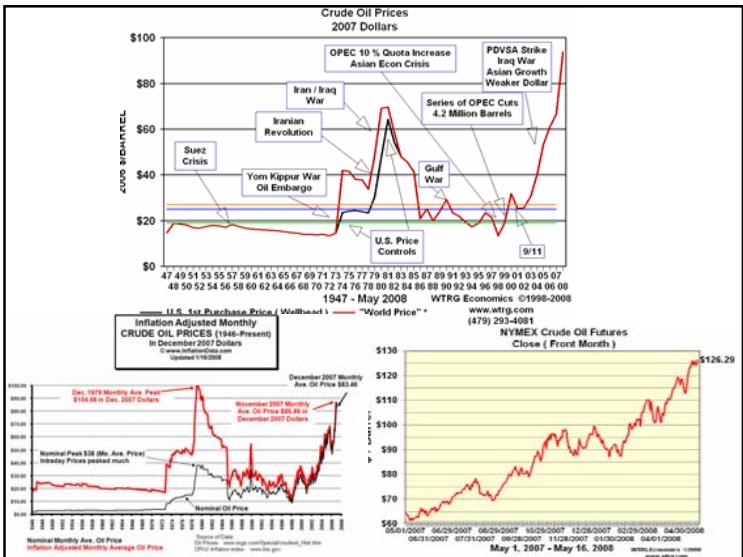
Μακροοικονομικές επιπτώσεις

Από:
- Δημοσιονομικό κόστος
  – Συνήθως όφελος
- Τιμή πετρελαίου
- Κλίμα προσδοκιών

Nordhaus (2002)
- $75/Βαρέλι => 0.8% μείωση ΑΕΠ για 10 χρόνια

Οικονομικές επιπτώσεις πολέμου (τώρα)

- Δημοσιονομικό κόστος
  – Συνολικό στις **19/5/2007 : $ 521 δις**
  (www.costofwar.com)
  (ΑΕΠ Ελλάδας, 2006, Ε305δις – ΗΠΑ, 2007 , $13τρις)

Πιθανότητες πολέμου
Άποψη των αγορών

- Προκύπτουν από τιμή Χρεόγραφου Σαντάμ (Saddam security)

- Προθεσμιακό συμβόλαιο της μορφής:
  Πληρωμή $10 αν την ημερομηνία *X* δεν είναι Πρόεδρος του Ιράκ ο Σαντάμ

- ... σε ιστότοπο συναλλαγής στοιχημάτων (betting exchange) www.tradesports.com

Ερμηνεία τιμής ως πιθανότητα

- "Hayek Hypothesis" για ρόλο αγορών γενικά

- Έχουν αρκετή ρευστότητα σε σχέση με άλλες αγορές για πολιτικά γεγονότα

- Αρκετά αποτελεσματικές

- Τιμές όλων των προθεσμιακών συμβολαίων κινούνται μαζί, και με αναμενόμενο τρόπο

- Επηρεάζονται από ειδήσεις με αναμενόμενο τρόπο

Table 1: Comparing the Depth of Futures Markets				
	Active Traders	Monthly Volume		Total Volume since Market Opened
		#Trades[b]	$ Traded	
Tradesports.com: "Saddam Security"				
Ousted by Dec '02	About 9,000 active	17,658	$3,020	$14,084
Ousted by Mar '03	traders of which	20,013	$12,722	$70,388
Ousted by June '03	2,500-3,000 participated in the "Saddam Security" market[a]	31,407	$11,429	$78,351
Iowa Electronic Markets: U.S. Presidential Elections[c]				
1988 Vote Share	155	7,475	$1,535	$8,123
1992 Vote Share	592	7,883	$2,167	$21,445
1992 Winner-takes-all	471	55,104	$13,115	$51,316
1996 Vote Share	264	2,573	$404	$3,628
1996 Winner-takes-all	1,151	27,513	$5,796	$137,386
2000 Vote Share	802	4,521	$1,697	$17,576
2000 Winner-takes-all	965	42,259	$20,931	$130,058
Chicago Mercantile Exchange: S&P 500 Futures				
S&P Futures traded in January 2003	2,725 individual members + 60 clearing firms	15 million	$900 billion	n.a. (Opened 4/21/83)

(a) Estimates of TradeSports traders by John Delaney, CEO of TradeSports.
(b) #Trades adjusted to $1 units. (1988 Iowa markets were claims for $2.50; Tradesports contracts are claims for $10.)
(c) Estimates of the Iowa market derived from Berg, Nelson and Rietz (2001).

Αποτελεσματικότητα «πολιτικών» προθεσμιακών αγορών

- Τυχαία διαδρομή

Table 2: Tests of Pricing Efficiency of the "Saddam Security"			
Dependent Variable: ΔSaddam Security (Daily)	March Security	June Security	Combined Sample
Panel A: Dickey Fuller Tests ΔSaddam Security=β*Saddam Security(t-1)			
Saddam Security(t-1)	-0.106 (.047)	-0.059 (.037)	-0.081 (.030)
Test statistic (t-stat)	-2.276	-1.591	8.063[a]
(10% critical value)	(-2.590)	(-2.591)	(18.693)
Reject Random Walk?	No	No	No
[p-value]	[p=.180]	[p=.488]	

- Άλλες πηγές πληροφορίας δεν βοηθούν στην πρόβλεψη τους

- Ακόμα και όταν είναι χαμηλής ρευστότητας, δίνουν καλές προβλέψεις

Συμπεριφορά τιμής / προβλεπόμενης πιθανότητας

Figure 1: Daily Closing Prices on the Saddam Security

Saddam Securities: Probability Saddam is Ousted
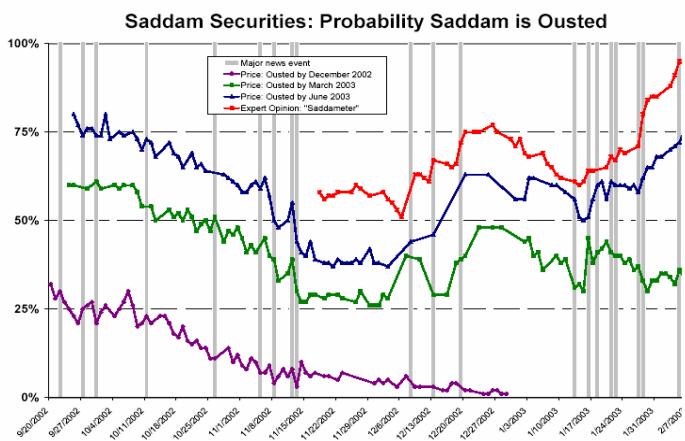
Appendix A: Major News Events

The following reflects our assessment of the major news revealed during our sample. The corresponding dates are shaded in grey in Figure 1.

| Date	Event
9/22/2002	Having voiced strong anti-war views during the campaign, Gerhard Schroeder wins German election.
9/27/2002	The U.S. presents a UN resolution giving Iraq 30 days to comply with inspections before use of force
9/30/2002	Iraqi officials agree to give UN inspectors unfettered access
10/11/2002	U.S. Senate backs use of force
10/26/2002	Major anti-war protests
11/5/2002	Republicans hold onto House and regain control of Senate
11/8/2002	UN Security Council votes 15-0 that Iraq must disarm
11/12/2002	Reports that Iraq bought nerve gas antidote
11/13/2002	Iraq agrees to admit weapons inspectors
12/8/2002	Iraq's report to UN claims it has no weapons of mass destruction
12/13/2002	US highlights major omissions from Iraq's WMD report
12/19/2002	Powell declares Iraq in "material breach" of UN Security Council resolution
1/13/2003	Turkey lets the US survey bases for possible troop deployment
1/16/2003	UN inspectors discover warheads in Iraq capable of carrying chemical weapons
1/18/2003	Major anti-war protests
1/21/2003	Britain mobilizes 26,000 troops
1/22/2003	Rumors circulated that some Arab leaders are angling to have Saddam exiled
1/27/2003	UN inspectors issue report giving Iraq a mixed report on compliance
1/28/2003	Bush makes case for war in State of the Union address
2/5/2003	Powell addresses the UN

Source: New York Times, September 20, 2002-February 7, 2003.

Σχέση πιθανότητας πολέμου και σποτ τιμών πετρελαίου

Spot Oil Price and the Probability of War
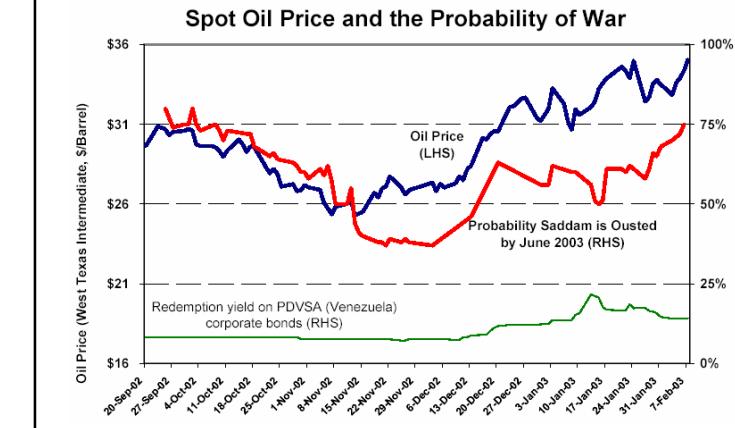
- Ποσοτικοποιούν σημασία πιθανότητας πολέμου για την τιμή του πετρελαίου

  10% αύξηση πιθανότητας ~ 3-4% αύξηση τιμής

  Από 0 σε 100% ~ αύξηση τιμής κατά $10

- Αιτιότητα δεν είναι ξεκάθαρη.

- Συντηρητική ερμηνεία: Ίδιοι παράγοντες επηρεάζουν και τις δύο τιμές

Σχέση πιθανότητας πολέμου και προθεσμιακών τιμών πετρελαίου

Figure 3. Oil Futures and Saddam Security Prices
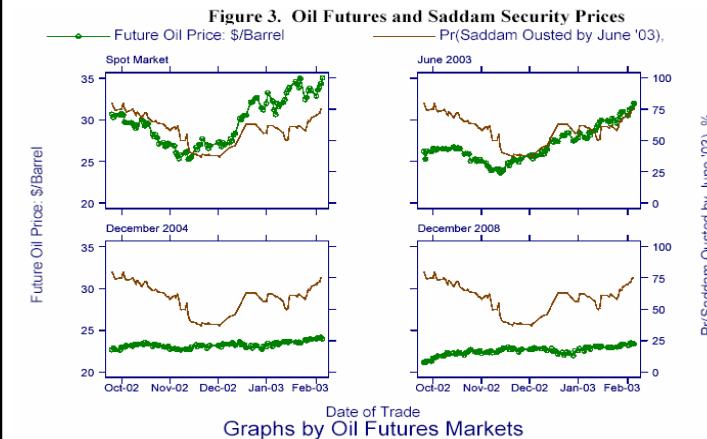
Figure 4. Effect of a 10 Percent Rise in War Probability on Future Oil Prices

Effects of War on Future Oil Prices
Estimated Price When Saddam Security = 100% Relative to Saddam Security = 0%
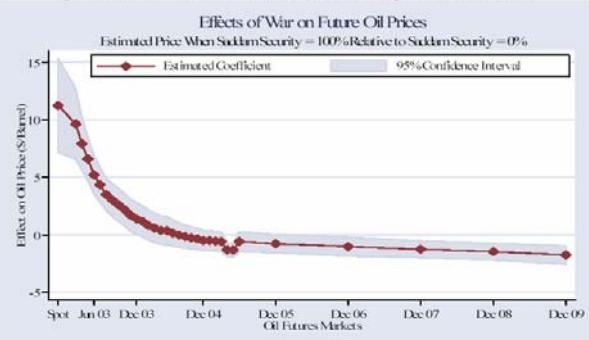
Figure 4 shows a compact representation of these results, graphing the likely impact on oil prices of war. The chart shows results from our preferred 5-day difference specification, although other specifications yield similar results. Thus, the first point on the chart shows the spot price rising by $11. The second point refers to the expected March price, which increases by around $9.50. The war premium spike then declines rather rapidly, falling to $5 by June 2003, and around $2 by the end of 2003. The effects then virtually disappears, and prices throughout 2004 and 2005 are unaffected by the probability of war. Further out there is some weak evidence that ousting Saddam may even lead prices to decline somewhat in the long-run, perhaps by around $1.50 per barrel. However, these long-run estimates are fragile, and even in this central estimate, are at best marginally statistically significant.

Σχέση πιθανότητας πολέμου και τιμών μετοχών

Περιμένουμε να υπάρχει σχέση επειδή π.π. επηρεάζει:

• Μακροοικονομικές συνθήκες
• Δημοσιονομικά έξοδα
• Σχέσεις με εμπορικούς εταίρους
• Τρομοκρατία
• Πιθανότητα και μορφή άλλων πολέμων

Figure 5. Saddam security and the S&P 500
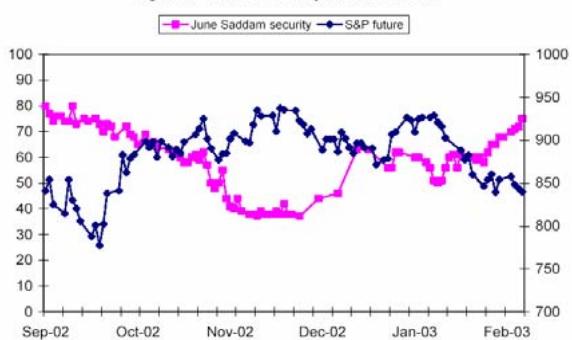
Figure 5 plots the level of the S&P 500 index and the price of the June Saddam Security over time. The graph suggests that stock prices increased as war risk declined in November and then decreased as war risk increased in December and again in late January. Table 4 presents regressions that analyze this relationship more formally. As in the previous section, we estimate both levels and difference specifications on a daily sample, in which we match the most recent transaction in each Saddam Security to the 4 pm closing value of the S&P 500. In addition, we are also able to construct a tick-by-tick sample, in which we match each trade in the Saddam securities to the next S&P future trade recorded on the CME.[17] As in the previous section, we find future changes in the Saddam Security have an economically (if not always statistically) significant relationship with current changes in the S&P, and so we include several leads in the difference specification.

Figure 6. Probability of war and the prices of out-of-the-money puts on the S&P 500
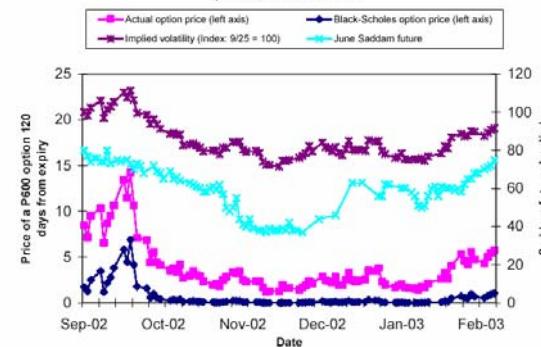
Figure 6 plots the price of the June Saddam Security and a CBOE index that measures the expec... future volatility of the S&P 500 implied by at-the-money option prices. It does appear that expe... future volatility increases with the probability of war. Figure 6 also plots the actual price of a 12... day-out S&P put option with a strike price of 600 and an estimate of its value constructed from ... futures price and the implied volatility of at-the-money options, using the Black-Scholes (1973) formula.[19]

παρατηρήσεις

- Αντίστροφη σχέση (σχ. 5)

- 10% αύξηση πιθανότητας ~ 1.5% μείωση S&P500
  - Pearl Harbor 7.6%
  - Korean War 6.5%
  - September 11th 5.5%

- Θετική σχέση με πιθανότητα κατάρρευσης (σχ.6)

- Πολύ μεγαλύτερο από ότι θα περιμέναμε από αντίκτυπο σε τιμές πετρελαίου
- Εξηγεί 35% διακυμάνσεων τιμών

Σχέση με διάφορους τομείς οικονομίας

Table 5. Impact of on war probability on sector index returns

Dependent variable: % Change in sector index

Sector	Long difference regressions (5 lags)	
	Coefficient	S.E.
Consumer Discretionary	-0.218***	(0.057)
Consumer Staples	0.002	(0.032)
Energy	0.028	(0.050)
Oil and Gas Drilling	0.151***	(0.052)
Oil and Gas Equipment	-0.030	(0.090)
Oil and Gas Exploration	0.142***	(0.054)
Oil and Gas Refining	0.029	(0.049)
Finance	-0.164**	(0.072)
Health Care	-0.068	(0.041)
Industrials	-0.072	(0.061)
Aerospace and Defense	0.060	(0.065)
Aerospace and Defense (excl. Boeing)	0.078	(0.067)
Information Technology	-0.402***	(0.099)
Materials	-0.072	(0.053)
Gold mining	0.481***	(0.103)
Telecom	-0.159***	(0.056)
Transportation	-0.045	(0.040)
Airlines	-0.375***	(0.113)
Utilities	0.071	(0.076)

Notes: This table repeats the 5-day difference specification in Table 4 for the 11 S&P top-level sector indices, and selected sub-indices.

- Θετική σχέση με χρυσό και πετρέλαιο

Σχέση με μετοχές διεθνώς

Figure 11
Estimated Effects of War on National Stockmarkets
Bars represent coefficient estimates; Lines represent 95% confidence interval

Estimated Effect of a 10% Rise in Probability of War on Stockmarket

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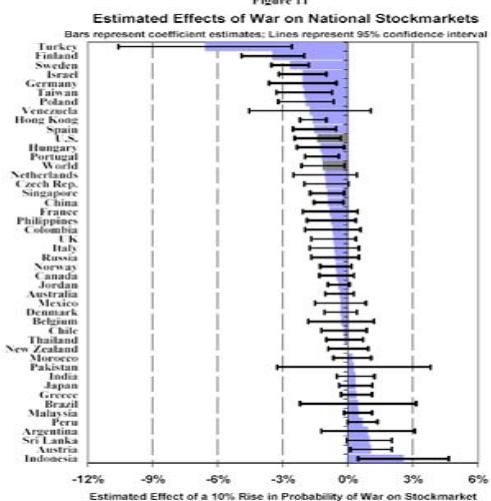
Table 7: Explaining Cross-Country Pattern of the Effects of War

Dependent Variable: Estimated Effect of War on National Stockmarket	
Usual Co-movement with MSCI World (Beta)	-.28***
	(.074)
Net Oil Imports (Fraction of GDP)	-.51**
	(.25)
Vulnerable to Attack or Unrest	-.093***
(Turkey, Israel, Jordan, Pakistan)	(.036)
Europe	-.067
	(.047)
Pro-U.S. Europe	.011
	(.046)
Troops committed	.009
(Australia, U.K., U.S.)	(.037)
Adj. R^2	.41
N	45

Notes: ***, ** and * denote significant at 1%, 5% and 10% levels, respectively   (Standard errors in parentheses).
Country-level observations weighted by the inverse of the squared standard error on the dependent variable.

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Παρατηρήσεις

- Ελλάδα: όχι σ.σ.

- Τουρκία: Ο πιο αρνητικός

Σημαντικοί παράγοντες
- Εισαγωγές πετρελαίου
- Συνδιακύμανση με παγκόσμιο δείκτη
- Ειδική ευαισθησία

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Αξιολόγηση προβλέψεων

Table 3. Ex-ante estimates of war effect on sectors and returns during the war

| Sector | Ex-ante estimated effect of war | | | | Alpha During War (3/14 to 4/9) |
| | Raw return | | Alpha | | |
	Coeff.	S.E.	Coeff.	S.E.	
Consumer Discretionary	-0.229***	(0.050)	-0.076***	(0.019)	0.034
Consumer Staples	-0.005	(0.035)	0.084***	(0.029)	-0.003
Energy	0.008	(0.041)	0.090***	(0.034)	-0.015
Oil and Gas Drilling	0.096	(0.074)	0.220***	(0.076)	-0.055
Oil and Gas Equipment	-0.072	(0.068)	0.038	(0.066)	-0.003
Oil and Gas Exploration	0.101**	(0.045)	0.170***	(0.043)	-0.009
Oil and Gas Refining	0.100	(0.065)	0.168***	(0.058)	0.010
Finance	-0.184***	(0.064)	-0.009	(0.021)	0.016
Health Care	-0.076**	(0.034)	0.046***	(0.017)	0.029
Industrials	-0.087	(0.051)	0.063***	(0.013)	0.016
Aerospace and Defense	0.053	(0.058)	0.171***	(0.037)	-0.001
Information Technology	-0.399***	(0.084)	-0.145***	(0.038)	-0.077
Materials	-0.090*	(0.049)	0.013	(0.020)	0.002
Gold mining	0.438***	(0.130)	0.430***	(0.130)	0.033
Telecom	-0.162	(0.102)	-0.021	(0.062)	-0.041
Transportation	-0.050	(0.036)	0.069**	(0.028)	0.025
Airlines	-0.399***	(0.090)	-0.260***	(0.072)	0.076
Utilities	0.046	(0.083)	0.102	(0.075)	0.031

Notes: This table repeats the 5-day difference specification in Table 1 for the 11 S&P top-level sector indices and selected sub-indices. Alphas are estimated using a single-factor model, with the beta estimated using daily data from 1/1/1996 to 6/30/2002.

- Αξιολόγηση μίας πρόβλεψης είναι δύσκολη

- Αντίκτυπος στους τομείς ήταν ο αναμενόμενος

Γενικά συμπεράσματα

- Ανάλυση δίνει μια ολοκληρωμένη εικόνα οικονομικής σημασίας πολέμου

- Ενδείξεις ότι:
  - τιμές καθορίζονται από προσδοκίες αγορών!
  - Προσδοκίες:
    - επηρεάζονται από (πραγματικές) ειδήσεις
    - ακριβείς σε σχέση με άλλου είδους προβλέψεις
    - λιγότερο ακριβείς από όσο θα θέλαμε

Βιβλιογραφία

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