

Las colecciones de Documentos de Trabajo del CIDE representan un medio para difundir los avances de la labor de investigación, y para permitir que los autores reciban comentarios antes de su publicación definitiva. Se agradecerá que los comentarios se hagan llegar directamente al (los) autor(es).

❖ D.R. © 1997, Centro de Investigación y Docencia Económicas, A. C., carretera México-Toluca 3655 (km. 16.5), Lomas de Santa Fe, 01210 México, D. F., tel. 727-9800, fax: 292-1304 y 570-4277. ❖ Producción a cargo del (los) autor(es), por lo que tanto el contenido como el estilo y la redacción son responsabilidad exclusiva suya.

\*The author thanks Chris Barry, P. Evans, E. Stevens, R. Cermeño, and seminar participants at the Latin American Econometric Society Meetings for helpful comments. Also, thanks are due to J. Díaz of the Mexican Stock Exchange for kindly providing me with the data and his comments. As usual, remaining errors are my sole responsibility.



**CIDE**

**NÚMERO 79**

---

**Fausto Hernández-Trillo\***  
**FINANCIAL DERIVATIVES INTRODUCTION AND STOCK  
RETURN VOLATILITY IN AN EMERGING MARKET WITHOUT  
CLEARINGHOUSE: THE MEXICAN EXPERIENCE**

**Abstract**

This paper introduces an alternative methodology to test whether financial derivatives introduction affects underlying stock return variance. Previous tests did not address the problem that variance changes systematically through time for individual firms as their leverage, investment opportunities, and other characteristics change. Our test consists in utilizing the GARCH process to generate time-series measure of stock return volatility, we then use these series to determine whether stock return variances change permanently when a financial derivative is introduced. We apply this methodology to the Mexican case which we consider of interest given that Mexican derivatives are traded in the Mexican Stock Exchange (MSE), not in an Option Exchange, and the credit risk is covered with a delta-hedging formula, not through a clearinghouse. Empirical results suggest that derivatives introduction does not reduce Mexican stock return volatilities ; this result holds even before the well known Mexican financial crisis of 1994.

## **1. Introduction**

Many studies have investigated the impact of the introduction of options on stock return behavior from both the theoretical (Dybvig and Ingersoll, 1982; Detemple and Selden, 1986 ; and Grossman, 1988) and empirical perspectives (Jennings and Starks, 1986; Conrad, 1989; Skinner, 1989; Detemple and Jorion, 1990; Freund, McCann and Webb, 1994). Virtually all the previous empirical work is based on a standardized derivatives market (mainly the U.S. Clearing Board of Options Exchange, CBOE, with the exception of Long, *et. al.* (1991) who used OTC derivatives) and the general conclusion is that the option introduction works favorably -or, in the worst case, does not affect- upon stock variances. This paper documents the impact of financial derivatives introduction on stock return volatility in an emerging market without a clearinghouse; in particular, we study the Mexican case.

This case is particularly interesting given that Mexican derivatives are traded in the Mexican Stock Exchange (MSE), not in an Option Exchange, and the credit risk is covered with a delta-hedging formula, not through a clearinghouse<sup>1</sup>. Apparently, this could be an additional factor that adversely affects the volatility of the underlying securities. In this paper we perform a series of alternative empirical tests which extend previous results and verify some of the theoretical implications present in the literature. In particular, we introduce a test not present in current literature that allows for changes in variances to study whether the introduction of derivatives impacts stock return volatility. To perform this test, a proxy for daily stock variance is estimated through the Generalized Autoregressive Conditional Heteroskedastic (GARCH) model. As just said, this methodology addresses the problem that variance changes systematically through time for individual firms as their leverage, investment opportunities, and other characteristics change. This fact differences this paper from the existing empirical literature (Jennings and Starks, 1986; Conrad, 1989; Skinner, 1989; Detemple and Jorion, 1990; Long, *et. al.*, 1991 ; Freund, McCann and Webb, 1994). In addition, our methodology can tell whether the change in stock return volatility is permanent or not.

Our results suggest that financial derivatives introduction in a market without clearinghouse does not favorably affect the volatility of the underlying securities. This result holds even before the well known 1994 Mexican (*Tequila*) economic crisis. Furthermore, before this crisis many stock volatilities were adversely affected. This indicates that the noise

<sup>1</sup>The opening of a Futures and Options Exchange with a clearinghouse is still under study.

introduced by the shock was not the cause of this fact. These results suggest that derivatives traded in a Futures and Option Exchange with a clearinghouse might diminish this adverse effect.

The paper is organized as follows: Section 2 briefly describes the Mexican financial derivatives market; in Section 3 the empirical methodology is presented while Section 4 discusses some relevant aspects of data and its sources. Section 5 presents and briefly discusses the empirical results. Finally, conclusions are provided in Section 6.

## **2. The Mexican Derivatives Market**

Financial derivatives in Mexico were introduced in 1992, when expectations about the economy were uprising. These instruments were not traded in an Option Exchange because this needed authorization by financial authorities and a sophisticated regulatory framework as well. Thus, they were placed in the Mexican Stock Exchange<sup>2</sup> under the name of *warrants*<sup>3</sup> where their introduction went by the *fast track* regulation and hence credit risk was covered by a delta hedging formula.

Derivatives in Mexico are issued mainly by brokerage houses which have to make a delta hedging with underlying shares and/or correlated securities for calls, and with short-sales of underlying shares and/or correlated securities for puts. The delta can never be greater than one in absolute value, since the number of underlying shares is necessarily smaller than the total of warrants they are standing for. The objective of this strategy is making delta neutralize the risk at the end of the day. In addition to delta hedging, issuers must stick to a plan of cash requirements which consist in i) restating the hedging, ii) buying back warrants or, iii) paying the exercising<sup>4</sup>.

It is interesting to investigate the impact of these kind of financial derivatives on the volatility of underlying securities ; this problem, among others, differentiates this paper with respect to others. This study may tell us whether investors perceive higher credit risk under the delta hedging formula. Next section presents the empirical methodology.

<sup>2</sup> Under Kane (1981)'s regulatory dialectic, this process was a way of circumventing regulation.

<sup>3</sup> Unlike American warrants, these instruments can be calls or puts and are issued by brokerage houses.

<sup>4</sup> For details on the functioning and regulation in this market, see Diaz and Hernandez-Trillo (1996).

### 3. Methodology

Existing empirical works have used different methodologies to assess the problem of our concern. Jennings and Stark (1986) determine the effect of earnings announcements on stock price change variability employing a PW variance test. Conrad (1989) performs an event study. Skinner (1989) forms two variance ratios for each firm, first by dividing estimated variance after listing by estimated variance before, and second the same ratio adjusted for market volatility; he also checks Wilcoxon signed-rank test. Detemple and Jorion (1990) proxy volatility by squaring returns around listing dates which in turn are standardized and then examine if these average to one. Finally, Freund, McCann and Webb (1994) perform a variance regression analysis which, in turn, is applied to changes in stock residuals variance upon option introduction.

In this paper we take a completely different road. The reason is that one needs to address the problem that variance changes systematically through time for individual firms as their leverage, investment opportunities, and other characteristics change (Christie, 1982)<sup>5</sup>.

We proceed in the following manner. First, we generate time-series measure of stock return volatility through ARCH and GARCH processes as defined in Engle (1982) and Bollerslev (1986), respectively. Then we use a dummy<sup>6</sup> after the introduction to determine the impact of derivatives introduction on stock return volatility. In particular, the methodology allows us to establish if this effect is permanent. We now describe the empirical methodology.

An AR(q) model is adjusted for each underlying stock return; then we check for the implied ARCH processes. If the process presents it, then errors are heteroskedastic and daily variance is obtained.

Suppose stock returns ( $r_t$ ) can be modeled as

$$\varphi(B)r_t = \theta(B)\varepsilon_t$$

where  $\varphi(B)$  and  $\theta(B)$  are polynomials,  $B$  is the lag operator and  $\varepsilon$  is white noise with  $V(\varepsilon) = \sigma^2$ . Then the implied ARCH process is modeled in the following manner:

$$r_t | \psi_{t-1} \sim N(X\beta, h_t)$$

$$h_t = h(\varepsilon_{t-1}, \varepsilon_{t-2}, \dots, \varepsilon_{t-p}, \alpha)$$

<sup>5</sup> Skinner (1989) addressed this problem generating 'an empirical distribution' of market-adjusted variance ratios but he does not take into account the fact that variances change through time.

<sup>6</sup>Engle and Mustafa (1992) use a similar approach to determine whether the crash of 1987 permanently affected the volatility of the Standard & Poor Stock Index.

where  $X$  is a linear combination of lagged endogenous and exogenous variables included in  $\psi$ , the information set, with  $\beta$  a vector of unknown parameters.

Then to determine how the financial derivatives introduction affects  $h_t^2$ , the conditional variance of the underlying stock return, we perform the following test :

$$h_t^2 = \mu + \alpha \varepsilon_{t-1}^2 + \sum_{i=1}^k c_i \Delta \varepsilon_{t-i}^2 + \theta DU_t + v_t$$

where

$$DU_t = \begin{cases} 1 & \text{if } t > T_B \\ 0 & \text{o.w.} \end{cases}$$

Thus if  $DU_t$  is negative and statistically significant we can say that conditional variance was reduced permanently.

We then model it using a more flexible lag structure of the conditional variance : a GARCH process,

$$h_t^2 = \mu + \alpha \varepsilon_{t-1}^2 + \lambda h_{t-1}^2 + \theta DU_t + \omega_t$$

where variables are as defined earlier. Number of lags is identified with the Schwarz criterion.

Next section presents and briefly discusses data sources and its characteristics.

#### 4. Data

The Mexican Stock Market provided us with a list of 33 stocks<sup>7</sup> and the market index on which warrants have been introduced from October 1992 to June 1996. A total of 282 warrant listings is available<sup>8</sup> of which 96 per cent are calls. As reported in Table 1, nearly 72 per cent (203) of these derivatives were introduced before September 1994, that is, 100 days before the Mexican peso crisis erupted. For our purposes the underlying security must have returns data listed for 250 days before and after derivatives introduction. In addition, there exist derivatives issued on a security with the same exercise price and expiration date. Thus, after eliminating these and companies which had missing returns during the selected windows before and after the listing date, the number of

<sup>7</sup> Mexican derivatives are generally introduced on large stocks, in particular, those conforming the market index. The Mexican Stock Index (IPC) contains 35 stocks. There is some evidence which suggest that this is a highly concentrated market (see Hernandez-Trillo, 1996).

<sup>8</sup> In this study we do not include puts. For a detailed history of Mexican warrants trading, see Díaz and Hernandez-Trillo (1996).

these financial instruments was further reduced to 178 (issued on 33 stocks and market index).

### 5. Empirical Results

To examine whether there is a difference in return volatility before and after *warrants* listing, we first follow Skinner (1989) and perform a signed-rank Wilcoxon test, which reported a value of -0.929961872<sup>9</sup>. This number suggests that return variance increases after options are listed on stocks. However, this test has the limitation that it does not address the problem that variance changes systematically through time for individual firms as their leverage, investment opportunities, and the characteristics change (Christie, 1982).

To address the problem we now apply the methodology described in section 3. Thus, we first modeled underlying stock returns<sup>10</sup>. These seemed to behave according to the following structure:

$$(1 - \phi B)r_t = \theta_0 + \varepsilon_t$$

Table 2 presents these results. This table also contains the ARCH test for each process. As can be noted most of them follow an ARCH (1) process. This clearly suggests that conditional variances are not constant.

Based on these results -that variance is not constant- we generate time-series measures for daily variances and the following model was adjusted :

$$h_t^2 = \mu + \alpha \varepsilon_{t-1}^2 + \theta DU_t + v_t$$

where variables are as defined above. The time allowed after the warrant introduction is 250 days. Results are presented in table 3<sup>11</sup>.

As we can observe only 66 out of 178 stock return variances (37.7 per cent) experienced an apparent reduction as  $\theta$ 's have a negative sign ; however, only seven of these coefficients were statistically significant at a 95 per cent ; that is, in only 4 per cent of the cases the introduction of warrants decreased the stock return volatility.

<sup>9</sup> To perform this test an estimate of daily market volatility is used to standardize the daily stock return data (see, French, Schwert and Stambaugh ; 1987) since it is possible that any observed change in variance around the time of options listing is explained by contemporaneous changes in market volatility. To estimate the test we obtained variances from periods of 100 days immediately before and after the date on which traded warrants are listed on stocks.

<sup>10</sup> These were standardized as in footnote (9).

<sup>11</sup> We do not report the constant and the coefficient of the lagged squared residual and only report the coefficients of the dummy. This is because we reported the ARCH processes in table 2.

On the other hand, the other 112 stock return variances seemed to increase as  $\theta$ 's reported a positive sign ; 81 of these were statistically significant ; in other words, in 46.2 per cent of the cases the underlying stock return variance augmented as a result of the introduction of a warrant.

Table 3 also contains a column with the warrant introduction date. We can note that 92 of these were introduced before September 1994, that is, approximately 100 days before the financial Mexican crisis erupted. We acknowledge this because it could be argued that the crisis contaminated volatilities. With this in mind, we observe that only 7 of the total of warrants issued reported a negative sign but they were all statistically not significant. What is more, 64 showed to be positive and statistically significant. Clearly, this tells us that even before the Mexican crisis erupted, warrant introduction adversely affected stock return variances.

Then, allowing for GARCH process which are more flexible structures, we performed the following test :

$$h_t^2 = \mu + \alpha \varepsilon_{t-1}^2 + \lambda h_{t-1}^2 + \theta DU_t + \omega_t$$

where variables are as defined above. Results<sup>12</sup> are presented in Table 4.

As we can observe only 66 out of 178 stock return variances (around 37 per cent) experienced an apparent reduction as  $\theta$ 's have a negative sign ; however, only 18 of these coefficients were statistically significant at a 95 per cent ; that is, in only 10 per cent of the cases the introduction of warrants decreased the stock return volatility.

On the other hand, the other 112 stock return variances seemed to increase as  $\theta$ 's reported a positive sign ; 64 of these were statistically significant at 95 per cent; in other words, in 36.2 per cent of the cases the underlying stock return variance augmented as a result of the introduction of a warrant.

In sum, 54 per cent of the cases (82 in number) did not show a change in variance after financial derivatives introduction, while 36 per cent experienced a statistically significant increase and only 10 per cent a reduction.

Table 4 also contains a column with the warrant introduction date. As in Table 3 we can see that 92 of these were introduced before September 1994<sup>13</sup>, that is, approximately 100 days before the financial Mexican crisis erupted. Only 19 of these reported a negative sign but

<sup>12</sup> Note that  $\alpha, \lambda \geq 0$  and that  $(\alpha + \lambda) < 1$ , which ensures non-negativity and covariance stationary.

<sup>13</sup> Recall that not all derivatives in Table 1 were included for the reasons expressed in section 4.



they were all statistically not significant, while 73 underlying securities (nearly 80 per cent) showed positive sign with 41 of these statistically significant at the standard level of confidence.

Before the 1994 *Tequila* crisis the results are summarized as follows: 44.5 per cent reported a statistically significant increase in underlying stock return variance after the introduction of warrants while the remaining 55.5 per cent did not show any significant change.

It is worth noting that among the 178 warrants under study, 30 are issued on the market index (IPC); of these 27 reported an apparent increase in volatility after the derivative introduction as the  $\theta$ 's presented a positive sign though only 10 of them were statistically significant. In addition, it is important to pinpoint that a total of 17 warrants were issued on Telmex (the monopoly phone company) and 14 of them presented a positive coefficient  $\theta$ , of which 10 were statistically significant. This is important as Telmex accounts for 30% of the index<sup>14</sup>. Clearly, this tells us that even before the Mexican crisis erupted, warrant introduction did not affect favorably stock return variances.

## **6. Conclusion**

This paper has introduced an alternative methodology for examining the effect that financial derivatives introduction has on underlying stock return variances. In particular, this methodology, which takes into account that variances may change over time, was applied to the Mexican case, which lacks of a clearinghouse.

Empirical results suggest that derivatives introduction does not reduce Mexican stock return volatilities; this result hold even before the well known Mexican financial crisis of 1994. The results contrast with the existing empirical literature examined above which, as said, suggest that variance diminishes after the introduction.

The reason may be that agents perceive higher risk when there exists no clearinghouse, which, in turn, suggest that the introduction of a standardized futures and options Exchange with a clearinghouse might reduce this risk and thus reduce the stock return variances. The methodology can be easily used to test other Futures and Option Exchanges; this is in the author's future research agenda.

<sup>14</sup> Hernández-Trillo (1996) shows that Telmex exhibits common volatility with the market index and most of stocks compounding this index.

## References

- Bollerslev, T. (1986). Generalized Autoregressive Conditional Heteroskedasticity. *Journal of Econometrics*. North Holland.
- Bollerslev, T. Chou, R., and K. Kroner (1992). ARCH modeling in Finance : A Review of the Theory and Empirical Evidence. *Journal of Econometrics*, 52, North Holland.
- Brown, S., and J. Warner (1985). Using Daily Stock Returns. *Journal of Financial Economics*, 14, North Holland.
- Christie, Andrew (1982). The Stochastic Behavior of Common Stock Variances : Value, Leverage and Interest Rate Effect. *Journal of Financial Economics*, 10.
- Conrad, Jennifer (1989). The Price Effect of Option Introduction. In *Journal of Finance*, XLIV, No. 2, June.
- Detemple, J. And Jorion, Ph. (1990). Option Listing and Stock Returns : An empirical analysis. In *Journal of Banking and Finance*, 14. North Holland.
- Detemple, J. And L. Selden (1986). A General Equilibrium Analysis of Option and Stock Market Interactions, Mimeo, Columbia University.
- Diaz, J. and F. Hernandez-Trillo (1996). *Futuros y Opciones Financieras : Una Introducción*. Limusa Press, Mexico.
- Dybig, P. and J. Ingersoll (1982). Mean-Variance Theory in Complete Markets. *Journal of Business*, 55.
- Engle, Robert (1982). Autoregressive Conditional Heteroscedaticity with Estimates of the Variance of United Kingdom Inflation. *Econometrica*, Vol. 50, N0.4.
- Engle, R. and Ch. Mustafa (1992). Implied ARCH models from Option Prices. *Journal of Econometrics*, 52, North Holland.
- French, K., Schwert, W., and Stambaugh, R. (1987). Expected Stock Returns and Volatility. In *Journal of Financial Economics*, 19. North Holland.
- Freund, S., McCann, P.D. and Webb, G.P. (1994). A Regression Analysis of the Effects of Option Introduction on Stock Variances. *The Journal of Derivatives*, Vol. 1, N0. 3.

Grossman, Sanford (1988). An Analysis of the Implications for Stock and Futures Price Volatility of Program Trading and Dynamic Hedging Strategies. *Journal of Business*, 61.

Hernández-Trillo, F. (1996). Financial Diversification : a Reexploration with the Mexican Market. In *Financial Global Studies*. D. Ghosh and E. Ortiz (eds.). Routledge Press, Great Britain.

Jennings, R. and L. Starks (1986). Earnings Announcements, Stock Price Adjustment, and the Existence of Option Markets. *The Journal of Finance*, XLI, No. 1, March.

Kane, Edward (1981). Accelerating Inflation, Technological Innovation and the Decreasing Effectiveness of Banking Regulation. *Journal of Finance*., May.

Klemkosky, Robert (1978). The Impact of Option Expirations on Stock Prices. *Journal of Financial and Quantitative Analysis*, September.

Perron, Pierre (1989). The Great Crash, the Oil Price Shock and the Unit Root Hypothesis. *Econometrica*, vol 57, No. 6.

Skinner, Douglas (1989). Options Markets and Stock Return Volatility. In *Journal of Financial Economics*, 23. North Holland.

**Table 1**  
**Time profile of warrants introduction**

<b>Year</b>	<b>Number of Warrants</b>
1992	2
1993	47
1994 (before September)	119
1994 (after September)	35
1995	48
1996	31

**Table 2**

$$\phi(B)r_t = \theta(B)\varepsilon_t$$

Stock _1/	Phi	Std. Error	Q(20)*	ARCH(1) (Prob.)
Ahmsa	0.3400749	0.050922	19.14	3.80 (0.0512)
Alfa	0.077529	0.0309588	14.54	29.23 (0.00)
Apasco	-0.0776085	0.035374	28.37	86.1558 (0.00)
ATY	-0.0103176	0.0463567	26.76	17.7901 (0.00)
BNCI	0.3336436	0.0337311	34.65	26.1052 (0.00)
CCM	0.076597	0.037287	35.54	4.42952 (0.035)
Cemex	0.0999147	0.0306845	20.02	3.7927(0.065)
Cifra	0.021336	0.0308613	30.36	79.1985 (0.00)
Desc	0.1895272	0.0319736	36.29	17.0668 (0.00)
Elek	0.2048301	0.054649	29.92	3.31352(0.077)
Femsa	0.0636052	0.0317262	22.53	94.7162 (0.00)
Gcarso	0.1262185	0.0315394	24.17	65.3626 (0.00)
GFB	0.2357635	0.0425025	39.91	24.0882 (0.00)
GGE	0.0198276	0.0530834	19.70	3.7223 (0.0537)
Gigante	-0.0290481	0.0363724	28.1	53.3511 (0.00)
GMX	0.1059531	0.045174	17.89	2.9087 (0.0881)
HYLSA	0.0525907	0.0515198	28.37	15.7667 (0.0001)
ICA	0.1313992	0.0345979	23.72	99.7145 (0.00)
IPC	0.1665375	0.029932	20.92	107.23 (0.00)
KIM	0.0546349	0.0348338	41.05	61.2053 (0.00)
LVPL	0.112615	0.043977	21.16	1.5755 (0.1894)
MOD	0.0084768	0.0441567	14.8	3.7788 (0.0469)
MSC	0.0084402	0.0326082	29.56	42.5095 (0.00)
PNL	0.102278	0.0511173	23.44	3.94368 (0.0470)
Sears	0.1939301	0.04030618	12.03	49.348 (0.00)
Sidek	0.0430113	0.0368597	55.47	181.842 (0.00)
Sor	0.1246236	0.0437933	18.41	3.01 (0.067)
Tlevisa	0.093136	0.037368	26.86	17.7994 (0.00)
Telmex	0.0396627	0.025933	23.9	16.57 (0.00)
TMM	0.04866618	0.0394609	16.57	16.962 (0.0002)
Tolmex	0.0965636	0.031753	35.19	107.93 (0.00)
Vitro	0.0773436	0.0317601	41.11	20.6504 (0.00)

\*Ljung-Box Q-Stat.  
\_1/Number of observations may vary according to availability

Table #3

Underlying Stock	Warrant Introd. Date	Dummy	Std Error	T-STAT
Ahmsa	7/03/96	-0.0005626	0.0015653	-0.35941992
Alfa	28/05/93	-4.07E-05	7.23E-05	-0.56348021
	14/02/95	-6.29E-05	6.46E-05	-0.97277228
	7/07/95	-0.0001355	7.09E-05	-1.91195146
	31/08/95	-0.0001241	7.50E-05	-1.65577051
	2/12/94	-0.0001261	6.30E-05	-2.00317712
	12/01/94	3.16E-05	6.31E-05	0.5010306
	24/11/95	-0.0001869	8.42E-05	-2.21892437
	16/01/96	-0.0001544	9.27E-05	-1.66540826
APA	24/03/93	0.000389	0.0001907	2.03985317
	9/02/94	0.0007101	0.0001799	3.94719288
	19/07/94	0.0006956	0.000198	3.51313131
	2/06/94	0.0005951	0.0001899	3.13375461
ATY	4/10/94	0.0008446	0.0003006	2.80971391
BNCI	14/10/93	0.0005932	0.0001595	3.71912226
	10/11/94	0.0009724	0.0001573	6.18181818
CCM	19/10/93	0.0007622	0.0001931	3.94717763
	4/08/94	0.00110216	0.0001893	5.82229268
CEMEX	10/03/94	0.0015113	0.0009914	1.52440993
	14/06/93	0.001005	0.0011256	0.89285714
	12/08/93	0.0011218	0.0010754	1.04314674
	28/08/94	-0.0003735	0.000963	-0.37995931
	12/05/93	0.0009272	0.0011599	0.79937926
	22/06/93	0.0010224	0.0011178	0.91481747
	14/03/94	0.0015179	0.0009909	1.53183974
	14/10/93	0.0012416	0.001039	1.19499519
	10/11/93	0.00112778	0.001076	1.04812268
	17/08/94	-0.0003044	0.0009859	-0.30875342
	14/02/95	-0.0004924	0.0010348	-0.47584074
	2/09/94	-0.0002547	0.0009879	-0.25781962
	23/09/94	-0.0002024	0.0009909	-0.20425875
	25/10/94	-0.000132	0.0009972	-0.13237064
	11/10/94	-0.0001574	0.0009941	-0.15833417
	6/09/95	-0.0007882	0.001205	-0.65410788
	29/11/94	-5.34E-05	0.0010058	-0.05313184
	30/11/94	-4.84E-05	0.0010062	-0.04810177
	9/12/93	0.0013291	0.0010157	1.30855568
	2/06/95	0.0009101	0.0011014	0.82631197
	14/07/95	-0.0008968	0.0011413	-0.78577061
	2/12/94	-4.65E-05	0.0010067	-0.04614086
	28/10/95	-0.0007428	0.0012888	-0.57635009
	24/11/96	-0.000896	0.00113455	-0.78974043
	19/07/95	-0.0008899	0.0011458	-0.77666259
	30/01/96	-0.0009563	0.0015302	-0.62495099
	16/01/96	-0.000968	0.0014795	-0.65427509
CIFRA	26/08/93	0.0002651	0.0001063	2.49388523
	30/08/93	0.000266	0.0001062	2.52354049
	12/05/93	0.000199	0.0001156	1.72145329
	22/06/93	0.0002318	0.0001114	2.08078995
	9/02/94	0.000286	9.96E-05	2.87119767
	13/04/94	0.0002409	9.85E-05	2.44588528
	3/08/94	0.0002531	9.83E-05	2.57450921
	9/09/94	0.0002724	9.88E-05	2.75848101
	6/10/94	0.0002939	9.92E-05	2.98210441
	23/05/96	-0.0001423	0.0001089	-1.3067034
	2/06/94	0.0002243	9.81E-05	2.2866755
	17/11/94	0.0003258	0.0001002	3.25149701
	11/06/95	-0.0001281	0.000117	-1.09487179
	26/04/95	-0.0001486	0.0001071	-1.38748833
	19/07/95	-0.0001329	0.0001143	-1.16272966
23/02/96	-0.0002287	0.0001634	-1.3996328	
29/03/96	-0.000309	0.0002531	-1.22086132	

Table #3 (cont. a)

Underlying Stock	Warrant introd. Date (d-m-y)	Dummy	Std Error	T-STAT
DESC	14/10/93	0.0002428	0.0001243	1.9533387
	8/09/95	-0.0002342	0.0001298	-1.80709877
ELEK	18/10/94	0.0009788	0.0008248	1.56659131
FEMSA	25/08/93	0.0005214	0.0002224	2.34442448
	5/08/93	0.0005166	0.0002264	2.28180212
	13/09/94	0.0005681	0.0001965	2.89109415
	25/10/94	0.0006318	0.0001977	3.19575114
	10/11/94	0.0006393	0.0001982	3.22552977
	17/10/95	-0.0003206	0.0002474	-1.29587712
GCAR	10/12/93	0.0003572	0.0001179	3.02958617
	19/05/94	0.0002251	0.000112	2.00982143
	5/08/93	0.0003336	0.0001267	2.59207459
	12/04/94	0.0002662	0.0001128	2.35992908
	7/10/94	0.0003386	0.000112	3.02321429
	11/08/94	0.0002805	0.0001114	2.51795332
	28/10/94	0.0003616	0.0001124	3.21708185
	4/10/94	0.0003331	0.0001119	2.97678497
	10/11/94	0.0003733	0.0001127	3.31233363
	9/12/93	0.0003559	0.000118	3.01610169
	17/10/95	-0.0001855	0.0001409	-1.31653655
	30/01/96	-0.0002938	0.0001899	-1.7292525
	15/12/95	-0.0002379	0.0001547	-1.53781513
GFB	27/05/94	0.0006636	0.0002179	3.04543369
	2/08/94	0.000665	0.0002178	3.14508724
GGE	9/08/94	0.0006938	0.0002717	2.18549871
GIG	25/08/93	0.0004591	0.0002123	2.16250589
	4/03/94	0.0006732	0.0001999	3.38768384
GMX	16/01/96	-0.0001378	0.0001284	-1.07320872
	26/01/96	-0.0001466	0.0001311	-1.11973591
	14/05/96	-0.0001977	0.0001859	-1.08347499
	8/09/95	-0.0001695	0.0001148	-1.47905759
HYLSA	16/01/96	-0.0005179	0.0001939	-2.67096441
	23/02/96	-0.0005543	0.0002051	-2.70258411
ICA	25/08/93	0.0005538	0.000153	3.61960784
	23/11/93	0.0006405	0.0001456	4.39903848
	11/08/94	0.0007531	0.0001444	5.21537396
	26/10/94	0.0009476	0.0001508	6.28381983
IPC	25/03/93	5.53E-05	4.83E-05	1.19352052
	18/03/93	5.25E-05	4.66E-05	1.13148883
	19/11/93	0.0001083	4.03E-05	2.69068323
	8/02/94	0.0001009	3.94E-05	2.58091371
	10/09/93	9.89E-05	4.13E-05	2.39885817
	12/04/94	9.30E-05	3.92E-05	2.37547893
	16/11/93	0.0001072	4.03E-05	2.66004963
	23/11/93	0.0001096	4.02E-05	2.72569013
	17/12/93	0.0001112	3.99E-05	2.78557114
	25/04/94	6.47E-05	3.91E-05	1.65430838
	13/05/94	6.04E-05	3.91E-05	1.54775928
	15/06/94	6.61E-05	3.91E-05	1.69193342
	12/05/94	7.94E-06	3.93E-05	2.02240896
	19/08/94	8.25E-05	3.93E-05	2.09788607
	26/08/94	8.46E-05	3.94E-05	2.14662805
	8/09/94	9.05E-05	3.95E-05	2.29302915
	4/10/94	9.75E-05	3.97E-05	2.45783994
	18/11/94	0.0001049	4.01E-05	2.61335328
	24/11/94	0.0001075	4.02E-05	2.6727996
	30/11/94	0.000108	4.03E-05	2.8605659
	25/05/95	-8.01E-05	4.39E-05	-1.36717505
	1/03/95	-3.99E-05	4.17E-05	-0.95613615
	28/04/95	-8.14E-05	4.31E-05	-1.42459397
	1/03/96	-0.0001099	6.78E-05	-1.62694301
	19/05/94	5.90E-05	3.80E-05	1.5102459
	11/08/95	-6.35E-05	4.72E-05	-1.34604789
	5/01/96	-0.0001133	5.85E-05	-1.93708328
	21/12/95	-9.78E-05	5.69E-05	-1.71829996
	18/06/98	-8.37E-05	0.0001253	-0.66759777
	29/05/96	-0.0001143	0.0001024	-1.11621094

Table #3 (cont. b)

Underlying Stock	Warrant Introd. Date	Dummy	Std Error	T-STAT
KIM	12/04/94	0.000176	0.0001061	1.65881244
	9/05/95	-0.0002057	0.0001008	-2.0406746
	19/07/95	-0.0002172	0.0001053	-2.06267806
LVPL	14/10/93	-8.31E-06	5.31E-05	-0.15637356
MOD	11/08/94	-0.0025287	0.0025515	-0.99106408
	19/08/94	-0.0024693	0.0025503	-0.96823903
MSC	19/10/93	0.0002046	0.0001173	1.74424552
	2/06/94	4.19E-05	0.0001043	0.40172579
	18/11/94	0.0001671	0.0001038	1.60982659
	24/11/95	-0.0002722	0.0001354	-2.01033973
PNL	16/01/96	-0.0001566	8.20E-05	-1.90998902
SEARS	2/06/94	0.0007279	0.0002955	2.46328257
SIDEK	11/08/94	0.0010104	0.0005286	1.91146425
	8/09/95	-0.0001322	0.000544	-0.24301471
SOR	11/08/94	0.0002986	0.0001314	2.27245053
TELMEX	10/03/94	0.0001451	4.84E-05	2.9954583
	10/08/93	0.0001303	5.74E-05	2.27122189
	5/11/93	0.0001521	5.24E-05	2.90045767
	28/06/94	0.0001002	4.69E-05	2.13554987
	7/05/93	0.0001147	6.77E-05	1.69348885
	2/06/94	9.47E-05	4.72E-05	2.0078473
	25/05/94	8.90E-05	4.73E-05	1.88253968
	10/11/93	0.0001444	5.23E-05	2.76363636
	19/08/94	0.0001305	4.66E-05	2.79802744
	23/09/94	0.000149	4.66E-05	3.19468268
	8/09/95	-6.30E-06	5.46E-05	-0.11533529
	18/11/94	0.0001308	4.69E-05	2.79188901
	7/12/94	0.0001373	4.70E-05	2.92314243
	17/10/95	-4.73E-06	5.73E-05	-0.08248735
	19/07/95	-2.64E-05	5.21E-05	-0.50690714
5/01/96	-7.61E-05	6.49E-05	-1.17360469	
16/01/96	-9.91E-05	6.62E-05	-1.49592268	
TLVISA	23/09/94	0.0005127	0.0001383	3.70715835
	30/11/94	0.0004161	0.0001338	3.10986547
	2/12/94	0.0004201	0.0001337	3.1421092
	15/12/95	-0.0001156	0.0001601	-0.72204872
TMM	28/05/93	0.0002407	0.0001954	1.23183214
	9/12/93	0.0005176	0.0001929	2.68325557
TOLMEX	17/08/93	0.0003691	0.0001778	2.07592801
	9/02/94	0.0004575	0.0001596	2.86654135
	28/09/94	0.0004886	0.000155	3.15225806
	2/06/94	0.0003778	0.0001551	2.43584784
	9/05/95	-6.88E-05	0.0001664	-0.41322115
VITRO	11/08/93	0.0004777	0.0001691	2.82495566
	13/09/94	0.0004432	0.0001468	3.01907357
	25/10/94	0.0004603	0.0001475	3.12067797
	2/12/94	0.0004948	0.0001486	3.32974428
	9/05/95	-4.98E-05	0.0001582	-0.31491783
	15/09/95	-2.56E-05	0.0001775	-0.144
	5/01/96	-0.0002002	0.0002103	-0.95197337



Table #4

Underlying Stock Var.	Warrant Intrad. Date	alfa ARCH	Std. Error	lambda GARCH	Std. Error	Dummy	Std Error	t-stat of dummy
Ahmsa	7/03/96	0.134401	0.052851	0.583711	0.131708	-0.000109	3.83E-05	-2.845953
Alfa	28/05/93	0.131246	0.018547	0.793575	0.023449	-4.50E-06	5.78E-06	-0.77854671
	14/02/95	0.183913	0.023483	0.73429	0.022702	-2.26E-05	4.00E-06	-5.85
	7/07/95	0.135249	0.019974	0.779885	0.026068	-1.68E-05	4.76E-06	-3.52941176
	31/08/95	0.134393	0.019469	0.786049	0.024989	-9.43E-06	4.71E-06	-2.00212314
	2/12/94	0.134514	0.019463	0.792038	0.024143	5.25E-06	3.37E-06	1.5578635
	12/01/94	0.135267	0.019397	0.793662	0.023794	4.87E-06	3.78E-06	1.28835979
	24/11/95	0.13194	0.019253	0.787809	0.024909	-1.27E-05	5.01E-06	-2.53493014
	16/01/96	0.133164	0.019029	0.791005	0.024171	-8.01E-06	5.98E-06	-1.33946488
APA	24/03/93	0.147808	0.018607	0.842848	0.017179	6.20E-06	5.65E-06	1.09734513
	9/02/94	0.228301	0.031365	0.686715	0.037888	0.000105	2.54E-05	4.13385827
	19/07/94	0.196859	0.028998	0.768159	0.027867	5.47E-05	1.90E-05	2.87894737
	2/06/94	0.189432	0.02563	0.776885	0.026846	4.55E-05	1.65E-05	2.75757578
ATY	4/10/94	0.049937	0.010254	0.922178	0.013023	1.98E-05	6.68E-06	2.96407186
BNCI	14/10/93	0.116289	0.012858	0.85777	0.01048	1.71E-05	4.58E-06	3.73362445
	10/11/94	0.115261	0.017726	0.829912	0.021953	6.97E-05	1.57E-05	4.43949045
CCM	19/10/93	0.056818	0.009507	0.917396	0.012246	1.77E-05	4.81E-06	3.67983368
	4/08/94	0.047067	0.007583	0.938347	0.008702	1.08E-05	4.39E-06	2.46013667
CEMEX	10/03/94	0.121326	0.021595	0.862128	0.014837	1.58E-05	6.87E-06	2.29985444
	14/06/93	0.116262	0.009864	0.878258	0.008377	-5.93E-06	3.17E-06	-1.87066246
	12/08/93	0.12763	0.019836	0.867048	0.012611	5.30E-06	3.91E-06	1.35549872
	28/06/94	0.100466	0.019202	0.870031	0.011702	-2.30E-06	3.84E-06	-0.59895833
	12/05/93	0.100858	0.01919	0.868902	0.011852	2.56E-06	3.58E-06	0.7150838
	22/06/93	0.125994	0.019416	0.867293	0.0124	4.98E-06	3.71E-06	1.34231806
	14/03/94	0.125154	0.021855	0.862568	0.01453	1.50E-05	6.85E-06	2.18978102
	14/10/93	0.12251	0.019785	0.864592	0.013183	8.71E-06	4.55E-06	1.91428571
	10/11/93	0.121307	0.020515	0.864543	0.013609	8.99E-06	4.71E-06	1.90870488
	17/08/94	0.10248	0.019054	0.869645	0.011595	-2.82E-06	3.78E-06	-0.74803175
	14/02/95	0.102488	0.018909	0.870661	0.011473	-7.26E-06	4.19E-06	-1.7326969
	2/09/94	0.101211	0.018958	0.86963	0.011621	-1.70E-06	3.98E-06	-0.42713568
	23/09/94	0.102126	0.018997	0.869396	0.011608	-2.67E-06	3.99E-06	-0.66917293
	25/10/94	0.10116	0.018947	0.869276	0.011629	-2.51E-06	4.09E-06	-0.61369193
	11/10/94	0.119063	0.018807	0.869239	0.011659	-2.24E-06	4.04E-06	-0.55445545
	6/09/95	0.111991	0.01765	0.868207	0.011482	-2.79E-06	5.50E-06	-0.50727273
	29/11/94	0.1197163	0.01853	0.869462	0.0116	-3.95E-06	4.34E-06	-0.91013825
	30/11/94	0.101293	0.018737	0.869897	0.011489	-4.58E-06	4.33E-06	-1.05773672
	9/12/93	0.113114	0.009479	0.880325	0.006143	-8.47E-06	4.45E-06	-1.90337079
	2/06/95	0.102593	0.018998	0.870078	0.011542	-6.05E-06	4.40E-06	-1.375
	14/07/95	0.100317	0.01878	0.869603	0.011572	-6.04E-06	4.57E-06	-1.32168302
	2/12/94	0.102001	0.018902	0.870037	0.011526	-4.73E-06	4.34E-06	-1.08986175
	26/10/95	0.129912	0.018512	0.868748	0.011529	-5.35E-06	5.23E-06	-1.02294455
	24/11/95	0.104972	0.019121	0.870099	0.011488	-5.99E-06	5.18E-06	-1.15637066
	19/07/95	0.101606	0.018899	0.86969	0.011563	-5.96E-06	4.61E-06	-1.29284165
	30/01/96	0.108512	0.019618	0.869535	0.011608	-4.10E-06	5.84E-06	-0.70205479
	16/01/96	0.174871	0.020472	0.80889	0.013333	-0.000112	1.71E-05	-8.5497076
CIFRA	26/08/93	0.110348	0.016887	0.861748	0.018968	5.55E-06	3.60E-06	1.54166667
	30/08/93	0.0110185	0.016883	0.86156	0.018972	5.90E-06	3.63E-06	1.62534435
	12/05/93	0.114115	0.01722	0.862229	0.019126	4.01E-07	3.36E-06	1.1934524
	22/06/93	0.112548	0.017024	0.861501	0.018903	3.50E-06	3.43E-06	1.02040816
	9/02/94	0.113444	0.01745	0.858202	0.019647	5.41E-06	3.92E-06	1.38010204
	13/04/94	0.113988	0.17232	0.86176	0.019153	1.38E-06	3.53E-06	0.39093484
	3/08/94	0.114071	0.017267	0.861788	0.019191	9.95E-07	3.80E-06	0.26184211
	9/09/94	0.113073	0.017226	0.861268	0.01925	3.24E-06	4.11E-06	0.78832117
	6/10/94	0.112689	0.017255	0.860859	0.019395	3.95E-06	4.33E-06	0.91224018
	23/05/95	0.114467	0.017221	0.86169	0.019284	2.56E-07	4.45E-06	0.05752809
	2/06/94	0.113275	0.017183	0.861803	0.019084	2.77E-06	3.65E-06	0.75890411
	17/11/94	0.113254	0.017386	0.858768	0.019746	4.87E-06	4.88E-06	0.99795082
	11/08/95	0.114525	0.017234	0.861983	0.019213	-1.16E-07	4.77E-06	-0.02431868
	26/04/95	0.114404	0.017222	0.862195	0.019302	-2.03E-07	4.28E-06	-0.04742991
	19/07/95	0.114855	0.017244	0.862194	0.019191	-1.02E-06	4.47E-06	-0.22818792
	23/02/96	0.119243	0.018301	0.854519	0.02054	-1.03E-05	5.37E-06	-1.91806331
	29/05/96	0.123485	0.018782	0.845832	0.021477	-1.26E-05	5.98E-06	-2.10702341

Table #4 (cont. a)

Underlying Stock	Warrant introd. Date (d-m-y)	alfa ARCH	Std. Error	lambda GARCH	Std. Error	Dummy	Std Error	t-stat. of dummy	
DESC	14/10/93	0.132018	0.012092	0.79853	0.01248	1.62E-05	2.48E-08	6.532258065	
	8/09/95	0.13522	0.012509	0.773334	0.013866	-1.61E-05	2.90E-06	-5.531724138	
ELEK	18/10/94	0.16319	0.038892	0.887527	0.067429	0.00015	3.83E-05	3.918449088	
FEMSA	25/08/93	0.337854	0.033821	0.394289	0.047681	0.000189	2.59E-05	6.525098525	
	5/08/93	0.334185	0.033334	0.396207	0.047522	0.000169	2.58E-05	6.550387597	
GCAR	13/09/94	0.307782	0.031976	0.459795	0.045281	6.80E-05	2.41E-05	2.821576763	
	25/10/94	0.310846	0.031873	0.440879	0.046458	9.55E-05	2.77E-05	3.44765343	
	10/11/94	0.310276	0.031901	0.445062	0.046435	9.13E-05	2.73E-05	3.344322344	
	17/10/95	0.072404	0.009681	0.912129	0.010792	-3.57E-06	4.64E-06	-0.769396552	
	10/12/93	0.119486	0.01808	0.857343	0.01941	7.79E-06	2.98E-06	2.81409398	
	19/05/94	0.118819	0.017215	0.863214	0.018117	4.45E-06	2.59E-06	1.718146718	
	5/08/93	0.116245	0.017704	0.857834	0.019185	8.98E-06	2.92E-06	3.068493151	
	12/04/94	0.118809	0.017201	0.863332	0.018105	4.01E-06	2.56E-06	1.56840825	
	7/10/94	0.117317	0.017291	0.862136	0.018486	8.20E-06	3.12E-06	2.828205128	
	11/08/94	0.116191	0.016872	0.866321	0.017781	4.89E-06	2.84E-06	1.776515152	
	28/10/94	0.119668	0.017767	0.858422	0.01898	8.94E-06	3.39E-06	2.837168142	
	4/10/94	0.11693	0.017204	0.862818	0.018676	7.78E-06	3.06E-06	2.54248366	
	10/11/94	0.118974	0.017632	0.880196	0.018847	7.03E-06	3.34E-06	2.106682849	
	9/12/93	0.119888	0.018188	0.856454	0.019524	7.93E-06	3.00E-06	2.843333333	
	17/10/95	0.116142	0.016654	0.868427	0.017462	2.96E-07	2.95E-06	0.100338983	
	30/01/98	0.114883	0.016585	0.868785	0.017631	-1.81E-06	2.86E-06	-0.632867133	
	15/12/95	0.114651	0.01655	0.869219	0.017522	-1.80E-06	2.78E-06	-0.647482014	
	GFB	27/05/94	0.132866	0.022598	0.851281	0.020181	-9.81E-07	5.78E-06	-0.169723183
	GGE	2/06/94	0.132706	0.022598	0.851183	0.020261	-2.34E-07	5.90E-06	-0.039661017
		9/08/94	0.155566	0.037184	0.791047	0.038444	1.12E-06	1.50E-05	0.748666667
GIG	25/08/93	0.172582	0.027926	0.76607	0.029785	-1.80E-05	1.11E-05	-1.621821622	
GMX	4/03/94	0.172743	0.028373	0.764053	0.030402	-8.07E-06	1.14E-05	-0.53245614	
	16/01/96	0.215349	0.059518	0.472378	0.135768	-2.48E-05	3.99E-05	-0.821553885	
HYLSA	26/01/96	0.215108	0.059404	0.473096	0.135587	-2.06E-05	4.03E-05	-0.511168253	
	14/05/96	0.211101	0.059041	0.47938	0.134239	-5.24E-05	5.92E-05	-0.885135135	
ICA	8/09/95	0.217124	0.080329	0.45878	0.138683	-3.27E-06	3.45E-05	-0.947826087	
	18/01/96	0.002549	0.010241	0.959588	0.014156	-1.37E-05	5.48E-06	-2.5	
IPC	23/02/96	0.024632	0.01694	0.910807	0.0326	-2.92E-05	1.28E-05	-2.28125	
	25/08/93	0.117564	0.018088	0.872836	0.013834	9.38E-06	4.24E-06	2.20754717	
IPC	23/11/93	0.119568	0.017158	0.85905	0.014573	1.87E-05	6.91E-06	2.706222865	
	11/08/94	0.119959	0.017186	0.867068	0.015005	1.91E-05	8.22E-06	2.323800973	
	26/10/94	0.104247	0.016808	0.868743	0.017434	4.77E-05	1.89E-05	2.822485207	
	25/03/93	0.112179	0.017621	0.85918	0.018508	3.32E-06	2.39E-06	1.389121339	
	18/03/93	0.112804	0.017733	0.858594	0.01856	3.37E-06	2.41E-06	1.398340249	
	19/11/93	0.115282	0.018392	0.846721	0.020883	5.32E-06	2.56E-06	2.078125	
	8/02/94	0.114788	0.018084	0.850038	0.020207	4.54E-06	2.40E-06	1.891666667	
	10/09/93	0.112644	0.017775	0.852128	0.019976	4.72E-06	2.38E-06	1.983193277	
	12/04/94	0.113013	0.017786	0.856643	0.019382	2.42E-06	2.13E-06	1.136150235	
	16/11/93	0.115107	0.018346	0.847255	0.020804	5.19E-06	2.54E-06	2.043307087	
	23/11/93	0.115444	0.018421	0.846447	0.020911	5.38E-06	2.57E-06	2.085603113	
	17/12/93	0.115505	0.018413	0.847018	0.020813	5.30E-06	2.56E-06	2.0703125	
	25/04/94	0.112833	0.017765	0.857504	0.019297	2.06E-06	2.09E-06	0.985645933	
	13/05/94	0.11299	0.017789	0.857174	0.019345	2.25E-06	2.11E-06	1.068350711	
	15/06/94	0.112464	0.017882	0.857953	0.018142	2.27E-06	2.09E-06	1.091346154	
	12/08/94	0.112748	0.017821	0.868985	0.019443	2.82E-06	2.18E-06	1.293577982	
	19/08/94	0.113172	0.017896	0.855999	0.019596	3.19E-06	2.23E-06	1.430493274	
	26/08/94	0.113215	0.017911	0.855586	0.019684	3.48E-06	2.27E-06	1.533039648	
	8/09/94	0.114217	0.018107	0.853188	0.020082	4.20E-06	2.40E-06	1.75	
	4/10/94	0.114857	0.018334	0.851483	0.020414	4.46E-06	2.48E-06	1.794354839	
18/11/94	0.110757	0.017352	0.859048	0.018055	2.12E-06	2.27E-06	0.933920705		
24/11/94	0.110881	0.017375	0.858789	0.019101	2.20E-06	2.29E-06	0.96069869		
30/11/94	0.111075	0.017404	0.858541	0.019132	2.22E-06	2.30E-06	0.965217391		
25/05/95	0.10991	0.017194	0.863034	0.017854	-8.08E-07	1.90E-06	-0.32		
1/03/95	0.108795	0.017075	0.864224	0.017913	-2.29E-07	1.89E-06	-0.121184021		
26/04/95	0.109931	0.017201	0.863073	0.01787	-4.48E-07	1.89E-06	-0.237037037		
1/03/96	0.108512	0.017453	0.860098	0.018529	-5.49E-06	2.55E-06	-2.152941178		
19/05/94	0.113081	0.017798	0.858997	0.019365	2.35E-06	2.12E-06	1.108490566		
11/08/95	0.110735	0.017342	0.861847	0.017894	-2.07E-06	2.30E-06	-0.9		
5/01/96	0.110999	0.017789	0.857796	0.01878	-4.94E-06	2.52E-06	-1.96031746		
21/12/95	0.107958	0.017314	0.862851	0.018147	-4.43E-06	2.40E-06	-1.845833333		
18/08/96	0.111895	0.017288	0.860041	0.017969	1.51E-06	1.22E-05	0.123770492		
29/05/98	0.112485	0.017702	0.857495	0.01857	-3.48E-06	4.29E-06	-0.811188811		

Table #4 (cont. b)

Underlying Stock	Warrant introd. Date	alfa ARCH	Std. Error	lambda GARCH	Std. Error	Dummy	Std Error	t-stat. of dummy
KIM	12/04/94	0.224846	0.024709	0.753211	0.023829	2.23E-06	2.93E-06	0.76109215
	9/05/95	0.23521	0.025331	0.737557	0.024224	-1.07E-05	3.36E-06	-3.18452381
LVPL	19/07/95	0.235147	0.024989	0.733574	0.02452	-1.29E-05	3.58E-06	-3.60335196
	14/10/93	0.0207	0.013107	0.81103	0.048025	7.45E-06	3.77E-06	1.97612732
MOD	11/08/94	0.131633	0.046717	0.633588	0.102008	-0.001067	0.000281	-3.79715302
	19/08/94	0.135588	0.049284	0.605895	0.114384	-0.001136	0.000311	-3.65273312
MSC	19/10/93	0.06703	0.01557	0.873204	0.027808	1.16E-05	6.52E-06	1.7791411
	2/06/94	0.06581	0.015228	0.880075	0.02618	1.11E-06	4.89E-06	0.22699387
	18/11/94	0.071956	0.01617	0.882893	0.029636	1.32E-05	6.55E-06	2.01526718
PNL	24/11/95	0.058666	0.014682	0.884592	0.027176	-1.20E-05	4.90E-06	-2.44897959
	16/01/96	0.062394	0.035745	0.848893	0.079108	-2.68E-05	1.64E-05	-1.63414634
SEARS	2/06/94	0.047533	0.006348	0.943776	0.007536	1.32E-05	1.84E-06	7.17391304
	SIDEK	11/08/94	0.164584	0.021076	0.81508	0.022254	3.25E-05	1.42E-06
SOR	8/09/95	0.187483	0.024468	0.78432	0.02753	0.000102	3.45E-05	2.9652174
	11/08/94	0.145647	0.043219	0.207295	0.220207	0.000236	7.46E-05	3.16353887
TELMEX	10/03/94	0.175553	0.033271	0.632171	0.066957	2.89E-05	1.14E-05	2.53508772
	10/08/93	0.156883	0.028563	0.73562	0.040467	1.05E-05	6.62E-06	1.58610272
TLVISA	5/11/93	0.176191	0.032704	0.638525	0.062582	2.79E-05	1.09E-05	2.55963303
	28/06/94	0.159685	0.029544	0.724451	0.043851	1.40E-05	7.03E-06	1.99146515
	7/05/93	0.14854	0.027194	0.761743	0.035812	9.15E-06	5.99E-06	1.52754591
	2/06/94	0.167337	0.030582	0.707173	0.045808	1.54E-05	7.46E-06	2.06434316
	25/05/94	0.156698	0.02879	0.738025	0.04087	1.14E-05	6.38E-06	1.78683388
	10/11/93	0.172181	0.031784	0.662931	0.056647	2.38E-05	9.88E-06	2.40890688
	19/08/94	0.175623	0.033329	0.654913	0.060523	3.17E-05	1.11E-05	2.85585586
	23/09/94	0.177851	0.034893	0.627236	0.069646	4.12E-05	1.34E-05	3.07462687
	6/09/95	0.144287	0.026589	0.780391	0.032437	2.24E-06	5.70E-06	0.39298246
	18/11/94	0.162251	0.031368	0.701834	0.045439	2.18E-05	8.16E-06	2.67156863
	7/12/94	0.161704	0.031193	0.700802	0.045189	2.28E-05	8.29E-06	2.75030157
	17/10/95	0.144301	0.0265	0.780169	0.032811	9.17E-07	6.19E-06	0.14814216
	19/07/95	0.142056	0.026326	0.784075	0.032249	-1.73E-06	4.94E-06	-0.35020243
	5/01/96	0.138249	0.025832	0.789032	0.031716	-5.56E-06	5.89E-06	-0.94397284
	16/01/96	0.141786	0.026413	0.780225	0.033067	-7.74E-06	6.24E-06	-1.24038462
	23/09/94	0.201808	0.055532	0.131089	0.160279	0.00039	8.24E-05	4.73300971
	30/11/94	0.048815	0.0119497	0.869685	0.050407	3.12E-05	1.87E-05	1.6684492
	2/12/94	0.049376	0.017832	0.867592	0.045406	3.20E-05	1.63E-05	1.96319018
	15/12/95	0.042917	0.011552	0.921088	0.021379	-5.02E-06	4.47E-06	-1.12304251
	TMM	28/05/93	0.103171	0.018374	0.821227	0.027685	2.31E-05	8.08E-06
9/12/93		0.103174	0.020837	0.778444	0.039872	8.08E-05	2.40E-05	3.36666667
TOLMEX	17/08/93	0.178929	0.027997	0.704196	0.036554	5.59E-05	1.35E-05	4.14074074
	9/02/94	0.175364	0.028093	0.706087	0.038393	6.93E-05	1.22E-05	5.68032787
	28/09/94	0.177769	0.026581	0.718639	0.035256	7.73E-05	1.24E-05	6.23387097
	2/06/94	0.177787	0.026653	0.717027	0.03448	5.86E-05	1.11E-05	5.27927928
VITRO	9/05/95	0.161341	0.023515	0.765951	0.028063	5.63E-05	9.03E-06	6.23477298
	11/08/93	0.1539991	0.022326	0.739955	0.03198	6.99E-05	1.23E-05	5.88292683
	13/09/94	0.166779	0.023408	0.68437	0.035343	9.29E-05	2.04E-05	4.55392157
	25/10/94	0.1688756	0.023825	0.675938	0.036023	9.97E-05	2.16E-05	4.61574074
	2/12/94	0.159443	0.023082	0.680252	0.037056	0.000108	2.32E-05	4.65517241
	9/05/95	0.154568	0.021256	0.798192	0.025817	1.11E-05	9.36E-06	1.18589744
	15/09/95	0.152884	0.020759	0.797253	0.025019	1.70E-05	1.17E-06	14.5299145
5/01/96	0.144345	0.020088	0.81298	0.024084	-4.75E-06	1.17E-05	-0.40598291	