PENGUKURAN VAR PORTOLIO VALUTA ASING DENGAN ESTIMASI VOLATILITAS GARCH DAN EWMA PADA PT BANK ABC

TESIS

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UNIVERSITAS INDONESIA
FAKULTAS EKONOMI
PROGRAM STUDI MAGISTER MANAJEMEN
JAKARTA
AGUSTUS 2008

Untuk punggung halaman sampul

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Diajukan sebagai salah satu syarat untuk memperoleh gelar Magister Manajemen

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JAKARTA
AGUSTUS 2008

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dan semua sumber baik yang dikutip maupun yang dirujuk

telah saya nyatakan dengan benar.

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Telah berhasil dipertahankan di hadapan Dewan Penguji dan diterima sebagai bagian persyaratan yang diperlukan untuk memperoleh gelar Magister Manajemen pada Program Studi Magister Manajemen, Fakultas Ekonomi, Universitas Indonesia

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KATA PENGANTAR

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ABSTRAK

Nama : Sandi Januar Pribadi
Program Studi : Magister Manajemen
Judul : Pengukuran VaR Portfolio Valuta Asing Dengan Estimasi Volatilitas GARCH dan EWMA pada PT Bank ABC

Pengelolaan risiko dan *return* merupakan kegiatan utama dalam perbankan. Krisis yang terjadi pada tahun 1997 merupakan contoh yang paling konkrit pengelolaan risiko dan *return* terburuk perbankan Indonesia, karena pada tahun ini krisis dipicu oleh perbankan yang tidak memperhatikan hal ini. Gejolak internal maupun eksternal harus diperkuat secara fundamental karena semakin kompleksnya risiko perbankan dan menimbulkan peluang-peluang baru dalam hal risiko.Praktek tata kelola yang sehat (*good corporate governance*) sangat dibutuhkan karena semakin kompleksnya risiko perbankan sehingga fungsi identifikasi, pengukuran, pemantauan dan pengendalian risko bank sangat diperlukan. Risiko utama dalam hal perbankan ada 3 jenis yaitu risiko kredit, risiko pasar, risiko operasional.Teknik pengukuran risiko yang sedang berkembang pada saat ini adalah metode *Value at Risk* (VaR). VaR adalah pengukuran risiko secara kuantitatif yang mengestimasi potensi kerugian maksimal (*maximum potential loss*) yang terjadi di masa datang dan dihadapi pada jangka waktu tertentu (*holding period*) dan pada tingkat kepercayaan (*confidence level*) tertentu.Dalam menghitung VaR ini ada tiga pendekatan yang bisa digunakan yaitu *Parmetric VaR, Monte Carlo*, dan *Historical Simulation*. Penelitian ini metode yang digunakan adalah *Parametric VaR* dengan menggunakan pendekatan volatilitas menggunakan EWMA dan GARCH. Kerugian maksimum yang mungkin diderita suatu bank diestimasi dengan menggunakan volatilitas atau suatu ukuran untuk mengetahui fluktuasi harga suatu aset. Asumsi *level of confidence* metode *Exponetially Weighted Moving Average* (EWMA) dalam hal mengestimasi volatilitas pada PT Bank ABC ini adalah 99% dengan *decay factor* 0,94. Untuk menentukan ketepatan metode dan asumsi yang digunakan oleh Bank X agak sulit mengingat terdapat berbagai metode yang digunakan untuk melakukan estimasi volatilitas.

Kata kunci:
Resiko pasar, *EWMA, GARCH* dan *internal model*

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ABSTRACT

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Title : Measurement of VaR Foreign Exchange Portfolio
GARCH and EWMA Volatility Estimation in PT Bank ABC

Risk and return management are main priority in banking. Crisis that happens in 1997 was one of the worst examples of managing risk and return in Indonesian banking. Since at that time there were no attention given to risk and return management. Internal and external shock must be strengthened fundamentally due to complexity risk of banking and given opportunity in term of risk. Good corporate governance is needed because higher risk will affect on identification, measure, supervision and control function of a bank. There are 3 main risk on banking: credit risk, market risk and operational risk. Risk measuring technique that very common at present is Value at Risk (VaR) method. VaR is risk quantitative measurement which estimate maximum potential loss that could occur in the future or in holding period and apply on certain confidence level.There are 3 approaches to measure VaR. They are Parametric VaR, Monte Carlo and Historical Simulation. This research based on Parametric VaR with EWMA and GARCH approaches. Maximum loss that might be happened to one bank could be estimate by using volatility or measuring price fluctuation on an asset. Level of confidence assumption on exponentially Weighted Moving Average (EWMA) method to estimate the volatility on Bank ABC is 99% with 0.94 decay factor. To make sure the precise method and assumption on Bank ABC is hard since there are many methods used to estimate the volatility.

Key word:
Market risk, *EWMA, GARCH* and *internal model*

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BAB I
PENDAHULUAN

1.1. Latar Belakang

Dunia perbankan baik di dunia maupun di Indonesia selalu dikelilingi oleh risiko yang menghantamnya dari seluruh penjuru. Arus reformasi dalam segala bidang penghidupan dan globalisasi dalam bidang perekonomian telah menyebabkan perbankan terkepung risiko dari berbagai penjuru mata angin. Tidak ada jalan lain bagi perbankan agar dapat lolos dari kepungan risiko itu selain melakukan strategi penerapan manajemen yang andal dalam mengendalikan risiko yang dihadapinya itu sendiri.

Krisis yang terjadi pada tahun 1997 merupakan contoh yang paling konkrit yang menggambarkan kondisi terburuk perbankan Indonesia karena pada tahun ini krisis dipicu oleh kondisi perbankan yang tidak memperhatikan prinsip kehati-hatian. Menjadi tugas pemerintah yang harus menyelesaikan permasalahan ini yang salah satu langkah ekstrimnya dengan melikuidasi puluhan bank dengan beberapa tahapan sementara langkah yang lain dengan mencoba menyelamatkan bank dengan cara rekapitalisasi. Kedua langkah ini tidak saja mengeluarkan biaya yang sangat banyak tetapi juga menguras dana yang seharusnya bisa digunakan untuk pembangunan agar kecukupan modal bagi bank yang direkapitalisasi dapat mencukupi.

Basel I Accord melalui *market risk amendment 1996* telah meliput *traded market risk* disamping *credit risk*. Dalam *Basel II Accord*, liputan atas risiko-risiko yang mempengaruhi kecukupan modal tersebut telah diperluas sehingga meliput pula berbagai jenis risiko lainnnya. Bank Indonesia sebagai Bank Sentral sekaligus menjadi *regulator* di Indonesia memberikan perhatian serius untuk membenahi sistem perbankan nasional dengan memberlakukan peraturan yang dikemukakan dalam Basel Amendment yang dikeluarkan oleh *Bank for International Settlement (BIS).*

Melalui Peraturan Bank Indonesia Nomor: 5/12/PBI/2003 tanggal 17 Juli 2003 tentang Kewajiban Penyediaan Modal Minimum atau KPMM, Bank wajib memenuhi kriteria yaitu:

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a. Bank dengan total aktiva sebesar Rp. 10.000.000.000.000,00 (sepuluh triliun rupiah) atau lebih;
b. Bank devisa dengan posisi surat berharga dan atau posisi transaksi derivatif dalam *Trading Book* sebesar Rp. 20.000.000.000,00 (dua puluh milyar rupiah) atau lebih;
c. Bank bukan bank devisa dengan posisi surat berharaga dan atau posisi transaksi derivatif suku bunga dalam *Trading Book* sebesar Rp. 25.000.000.000,00 (dua puluh milyar rupiah) atau lebih.

Selain risiko operasional dan risiko kredit, salah satu risiko yang mengancam yang dihadapi perbankan adalah risiko pasar. Risiko pasar adalah risiko kerugian pada posisi portfolio *trading* pada *on* dan *off balance sheet*. Kerugian ini muncul sebagai akibat dari terjadinya perubahan harga pasar *asset* dan *liabilities* bank tersebut. Perubahan harga tersebut merupakan akibat terdapatnya perubahan faktor pasar. Salah satu faktor pasar yang akan dibahas disini adalah nilai tukar mata uang asing.

Risiko nilai tukar (*foreign exchange risk*) merupakan salah satu bagian dari risiko pasar sehingga mulai tahun 2005 salah satunya adalah nilai tukar harus dihitung dan dimasukan dalam perhitungan *Capital Adequacy Ratio* atau *CAR* dan harus memenuhi kriteria tersebut.

Dua metodologi untuk mengukur potensi kerugian atas perubahan nilai instrumen keuangan yang diakibatkan oleh perubahan nilai tukar, yaitu Gap Analisis dan VaR. Dalam Gap Analisis risiko *forex* dihitung untuk setiap mata uang asing dimana bank mempunyai posisi dengan cara menghitung *exposure* dan volatilitas baik pada valas tunggal maupun gabungan. Sementara dalam VaR digunakan untuk menghitung perubahan nilai instrumen keuangan bank akibat perubahan nilai tukar untuk setiap mata uang asing.

Pengukuran yang direkomendasikan oleh BIS ini adalah internal model dengan menggunakan *Value at Risk* (VaR). Metode VaR salah satu model yang banyak digunakan dalam perbankan di dunia maupun di Indonesia untuk mengukur risiko pasar. Perhitungan VaR yang akan dilakukan adalah dengan meggunakan *Exponentially Weighted Moving Average (EWMA)* dengan menggunakan asumsi *level of confidence* 99% dan *decay factor* 0,94 dan *Generalized Autoregresive Conditional Heteroskedasticity (GARCH)*. Yang masih harus dipertanyakan disini adalah tentang penggunakan metode dan asumsi yang

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digunakan oleh PT Bank ABC apakah sudah tepat karena terdapat berbagai metode yang digunakan untuk melakukan estimasi volatilitas.

1.2. Perumusan Masalah

Berdasarkan latar belakang diatas, penelitian ini akan difokuskan pada permasalahan sebagai berikut :

1. Bagaimana karakteristik data *return* nilai tukar mata uang USD, EUR, JPY dan GBP terhadap IDR selama periode penelitian 12 Januari 2008 sampai dengan 31 Desember 2007
2. Berapa besarnya hasil perhitungan VaR untuk nilai mata uang USD, EUR, JPY dan GBP terhadap IDR dengan menggunakan estimasi volatilitas *Generalized Autoregressive Conditional Heteroskedasticity* (GARCH)
3. Berapa besarnya hasil perhitungan VaR untuk nilai mata uang USD, EUR, JPY dan GBP terhadap IDR dengan menggunakan estimasi volatilitas *Exponentially Weighted Moving Average* (EWMA)
4. Berapa besarnya hasil perhitungan VaR portofolio menggunakan model estimasi volatilitas terbaik

1.3. Tujuan Penelitian

Berdasarkan informasi diatas, tujuan yang ingin dicapai melalui penelitian ini adalah

1. Mengetahui karakteristik data return nilai tukar mata uang USD, EUR, JPY dan GBP terhadap IDR selama periode penelitian 12 Januari 2008 sampai dengan 31 Desember 2007
2. Memberikan informasi besarnya hasil perhitungan VaR untuk nilai mata uang USD, EUR, JPY dan GBP terhadap IDR dengan menggunakan estimasi volatilitas *Generalized Autoregressive Conditional Heteroskedasticity* (GARCH)
3. Memberikan informasi besarnya hasil perhitungan VaR untuk nilai mata uang USD, EUR, JPY dan GBP terhadap IDR dengan menggunakan estimasi volatilitas *Exponentially Weighted Moving Average* (EWMA)
4. Memberikan informasi besarnya hasil perhitungan VaR portofolio menggunakan model estimasi volatilitas terbaik

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1.4. Metode Penelitian

Penelitian dilakukan dengan melakukan pengumpulan data melalui elektronik yaitu *internet* dan juga studi pustaka. Data tersebut diambil dari www.bi.go.id dimana dalam *web site* tersebut tersedia dalam mata uang asing lebih dari 5.000 hari. Beberapa kajian teori yang dikemukakan berdasarkan berbagai literatur yaitu buku dan jurnal yang berhubungan dengan penelitian ini.

Selanjutnya melakukan pengujian data dengan menghitung *return* masing-masing nilai tukar dengan menggunakan formula logaritma normal. Selanjutnya data *return* tersebut diuji dengan pendekatan statistik dengan tahapan

1. Studi literatur mengenai VaR.
2. Pengumpulan data kurs
3. Perhitungan return masing-masing nilai tukar dengan pendekatan logaritma normal
4. Pengujian data return masing-masing nilai tukar. Pengujian yang dilakukan adalah:
   - Uji stasioneritas dengan ADF test
   - Uji normalitas dengan *Jarque-Bera test*
   - Pengujian *heteroskedasticity* dengan *White test*
   - Menguji data return untuk menentukan volatilitas yang akan digunakan
5. Menghitung VaR

1.5. Sistematika Penulisan

Secara garis besar sistematika penulisan karya akhir ini mempunyai tahapan sebagai berikut:

Bab I Pendahuluan

Dalam bab ini menjelaskan tentang latar belakang penulisan, perumusan masalah, tujuan penelitian, metode penelitian dan teknik pengumpulan data, serta sistematika penulisan.

Bab II Landasan Teori

Bab ini menjelaskan tentang teori yang mendasari pembahasan masalah melalui studi pustaka yang meliputi penjelasan teori mengenai:

- Definisi VaR serta teori-teori matematika dan statistik yang menjadi dasar perhitungan VaR
- Metode perhitungan VaR dengan pendekatan EWMA dan GARCH

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Bab III Data dan Metodologi Penelitian

Bab ini menjelaskan bagaimana cara penerapan asumsi, pemilihan model dan penggunaan data yang diperlukan untuk perhitungan VaR.

Bab IV Analisis Pembahasan

Pada bab ini perhitungan VaR dimulai dengan menggunakan model EWMA dan GARCH.

Bab V Kesimpulan dan Saran

Bab ini menjelaskan kesimpulan atas hasil dari penelitian dan juga saran-saran untuk memberikan arti yang lebih dalam pengembangan penelitian selajutnya.

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BAB II
LANDASAN TEORI

Dalam Bab ini akan diuraikan teori nilai tukar, teori risiko, risiko pasar, risiko nilai tukar, metode pengukuran risiko pasar, konsep, pengertian dan metode pengukuran *VaR*, konsep estimasi volatilitas EWMA dan GARCH.

2.1. Teori Nilai Tukar

Pengertian valuta asing menurut Bank Indonesia adalah mata uang asing yang digunakan dalam perdagangan internasional. Valuta asing atau valas diartikan sebagai seluruh kewajiban terhadap mata uang asing yang dapat dibayar diluar negeri, baik berupa simpanan pada bank di luar negeri maupun kewajiban dalam mata uang asing (Berlianta, hal.1, 2004).

Posisi pada transaksi valas dapat diartikan sebagai selisih antara tagihan dan aset dengan kewajiban suatu mata uang tertentu. Posisi valas dapat dibagi menjadi dua yaitu :

1. Posisi *long*

   Posisi *long* adalah suatu posisi dimana total tagihan dan aset suatu mata uang tertentu lebih besar dari total kewajibannya.

2. Posisi *short*

   Posisi *short* adalah suatu posisi dimana total tagihan dan aset suatu mata uang tertentu lebih kecil dari total kewajibannya.

2.2. Risiko dan Risiko Pasar (*Market Risk*)

2.2.1. Pengertian Risiko

Menurut Jorion (hal. 3, 2001) menyebutkan bahwa risiko adalah volatilitas dari suatu kejadian yang tidak diharapkan (*unexpected outcomes*) yang akan berpengaruh terhadap nilai dari aset dan kewajiban suatu bank.

Risiko dalam teori portofolio didefinisikan sebagai standar deviasi atau volatilitas tingkat imbal hasil (*return*). Standar deviasi menunjukan seberapa jauh besarnya penyimpangan dari nilai yang diperoleh dengan nilai yang diharapkan. Semakin besar nilai

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standar deviasi, semakin besar kemungkinan nilai aktual menyimpang dari yang diharapkan.

Bank Indonesia (PBI No. 5/8/PBI/2003, pasal 1, butir 2) mendefinisikan risiko sebagai potensi terjadinya suatu peristiwa (*events*) yang dapat menimbulkan kerugian bank.

2.2.2. Pengertian Risiko Pasar

Menurut Crouhy, Galai dan Mark (hal.34, 2001), risiko pasar adalah risiko dimana perubahan harga-harga pasar keuangan dan tingkat bunga akan dapat menurunkan nilai posisi bank. Dalam suatu aktifitas perdagangan, risiko bisa disebabkan karena adanya *open* (*unhedged*) *positions* dan korelasi yang tidak sempurna antara *market positions* yang direncanakan akan saling di-*offset*.

The Bank for International Settlement (BIS) dalam *Amendment to the Capital Accord to Incorporate Market Risks* (hal 1, 1996), risiko pasar didefinisikan sebagai "*the risk of losses in on-and off-balance-sheet positions arising from movements in market prices*".

Sesuai dengan *Amendment* 1996, jenis risiko pasar yang diperhitungkan adalah sebagai berikut:

- Risiko perubahan harga pasar dari instrumen keuangan (misalnya: *bonds, swap, future, options,* dsb) atau *equities* yang sensitif terhadap perubahan suku bunga yang terdapat pada *trading bank*,
- Risiko perubahan suku bunga (*interest rate risk*) dari instrumen-instrumen keuangan *non-derivatif*,
- Risiko perubahan nilai tukar (*foreign exchange risk*) dan risiko memegang posisi dalam komoditi (produk pertanian, *mineral non-oil* dan logam mulia *non-gold*) pada seluruh kegiatan usaha bank, *trading book* maupun *banking book*.

2.2.3. Risiko Nilai tukar (*Foreign Exchange Risk*)

Risiko nilai tukar adalah risiko kerugian akibat perubahan nilai tukar mata uang termasuk perubahan harga emas dari posisi bank dalam *trading* dan *banking book* (Bank Indonesia, hal. 32, 2003). Penyebab utama risiko nilai tukar adalah adanya ketidaksempurnaan korelasi antara pergerakan nilai tukar dan fluktuasi tingkat suku bunga internasional

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(Crouhy, Galai, Mark, hal. 179, 2001). Risiko ini timbul karena kebijakan posisi terbuka atau posisi *hedging* yang tidak sempurna.

Risiko nilai tukar adalah merupakan salah satu jenis dari risiko pasar. Risiko nilai tukar ini dapat timbul karena lemahnya nilai suatu mata uang suatu negara terhadap mata uang asing. Setiap fluktuasi nilai tukar yang terjadi di pasar akan membawa dampak finansial langsung terhadap pendapatan dan biaya bank.

Sesuai dengan ketentuan Bank Indonesia perihal : Pedoman Perhitungan Kewajiban Penyediaan Modal Minimum Bank Umum Dengan Memperhitungkan Risiko pasar (*Market Risk*) dan Pedoman Perhitungan Posisi Devisa Neto Bank Umum, perhitungan risiko nilai tukar didasarkan pada Posisi Devisa Neto (PDN) yang dimiliki Bank.

Menurut Antl (hal.5, 1999), "*Forex exposure arises when a corporation has transactions denominated in currencies other than its own or when it has net assets or liabiliteis outside the home country. As forex change, the value of the transactions or the value of the net assets and liabilities abroad changes when translated into the parents currencies*".

2.3. Metode Pengukuran Risiko Pasar

2.3.1. Konsep *Value at Risk* (*VaR*)

Pada tahun 1996, *Basle Committee on Banking Supervision* menyarankan agar perbankan menerapkan metode VaR dalam menghitung risiko pasar. VaR adalah suatu metode pengukuran risiko yang menggunakan teknik standar statistik. Menurut Jorion (hal 22, 2002), "*VaR summarizes the worst loss over a target horizon with a given level of confidence*". Menurut Best (hal. 10, 1998), "*Value at risk is the maximum amount of monye that may be lost on a portofolio over a given period of time, with a given level of confidence*".

2.3.2. Pengertian *VaR*

Menurut Philip (1998 : 10), definisi *VaR* secara umum adalah jumlah maksimal uang yang mungkin hilang dalam periode tertentu dan pada tingkat kepercayaan tertentu. Apabila *VaR* dihitung untuk periode 1 hari (*holding period* 1 hari) dengan tingkat kepercayaan 99%, maka definisi *VaR* adalah jumlah maksimum uang yang mungkin hilang pada

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portolio dalam 1 hari dengan tingkat kepercayaan 99%. Dengan kata lain, kemungkinan terjadi kerugian yang melebihi *VaR* dalam waktu 1 hari hanya sebesar 1% (1 dari 100 kemungkinan).

Hendricks (1995) menyatakan bahwa *VaR* mengukur risiko pasar dengan menentukan besar penurunan nilai portfolio selam periode waktu tertentu dengan probabilitas tertentu akibat perubahan harga pasar. Misalnya periode yang dipilih 1 hari dan tingkat kepercayaan 95%, maka ukuran *VaR* merupakan estimasi penurunan nilai pasar yang dapat terjadi dengan probabilitas 95% sampai dengan hari berikutnya. Dengan kata lain, jika diperoleh *VaR* yang akurat, maka kerugian atau penurunan nilai portfolio lebih besar atau sama dari ukuran tersebut terjadi dengan keyakinan 95%.

2.3.2.1. Parametric *VaR*

Parametric *VaR* disebut juga *Linear VaR*, *Variance-Covariance*, *Greek-Normal VaR*, *Delta Normal VaR*, atau *Delta-Gamma Normal VaR*. Pendekatan ini mengasumsikan bahwa distribusi probabilitas *return* adalah normal dan memerlukan perhitungan *parameter variance* dan *covariance*. Apabila aset financial hanya dipengaruhi oleh satu faktor saja, maka parameter yang digunakan hanya *variance* saja. Sedangkan bila aset financial berbentuk portofolio yang dipengaruhi beberapa faktor pasar, maka harus menghitung *covariance*.

2.3.2.1.1. Data Return

Dalam pengukuran risiko pasar, tingkat *return* aset finansial merupakan *random variable* (Jorion, hal 99, 2000). Ada dua metode untuk pengukuran *return* :

1. *The aritmetic atau discrete*

   Pada metode ini *rate of return* merupakan penjumlahan dari *capital gain* dan pembayaran dividen atau kupon dimana mempunyai persamaan sebagai berikut:

$$r_t = \frac{P_t + D_t - P_{t-1}}{P_{t-1}} \qquad (2.1)$$

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2. *Geometric rate of return*

Pada metode ini *rate of return* merupakan logaritma dari rasio harga, yaitu:

$$r_t = \ln \frac{P_t + D_t}{P_{t-1}} \quad (2.2)$$

Dalam penyederhanaan rumus maka untuk pembayaran dividen diasumsikan nol ($D_t = 0$) sehingga persamaan (2.2) diatas menjadi :

$$r_t = \ln \frac{P_t}{P_{t-1}} \quad (2.3)$$

Dimana:

R_t = *rate of return* pada hari t

P_t = harga kurs/aset pada saat t

P_{t-1} = harga kurs/aset pada saat t-1

2.3.3. *VaR Single Instrument*

VaR untuk aset tunggal menurut Jorion (hal. 14, 1998) dihitung dengan menggunakan persamaan sebagai berikut:

$$VaR = \alpha \times \sigma \times P \quad (2.4)$$

Dimana :

α = *Confidence of Level* (Derajat Kepercayaan)

σ = *Estimate of Volatility* (Estimasi Volatilitas)

P = Nilai posisi aset

Ketika *holding period* diperhitungkan dalam persamaan (2.4) maka rumus *VaR* akan menjadi:

$$VaR = \alpha \times \sigma \times P \times \sqrt{t} \quad (2.5)$$

Dimana :

t = *holding period*

2.3.3.1. *Confidence Level*

Confidence level merupakan suatu nilai tertentu yang tidak akan dilampaui dengan *probability* yang telah ditentukan (Marrison, hal 24, 2002). Contoh, hanya ada 5%

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kemungkinan suatu variabel yang diambil dari *Standard Normal Distribution* nilainya akan > 1,64. Bisa dikatakan bahwa tingkat kepercayaan untuk 95% variabel ini adalah 1,64.

2.3.3.2. *Estimate of Volatility*

Volatilitas *return* ditunjukan dengan varian atau standar deviasi *return*. Volatilitas adalah pengukuran statistik variasi harga suatu instrumen (Butler, hal.1*90*, 1999). Dalam melakukan *forecasting*, volatilitas umumnya diasumsikan konstan dari waktu ke waktu, walaupun kenyataannya tidak. Menurut Watsham (hal.191,1997), volatilitas yang konstan dari waktu ke waktu disebut *homoskedastic*, sedangkan volatilitas yang tidak konstan disebut *heteroskedastic*.

2.3.3.3. *Holding Period*

Dalam VaR mengukur risiko pasar dengan menentukan besar penurunan nilai portofolio selama periode waktu tertentu dengan porbabilitas tertentu akibat perubahan harga pasar. Periode yang dipilih 1 hari dan tingkat kepercayaan 95%, maka ukuran VaR merupakan estimasi penurunan nilai pasar yang dapat terjadi dengan probabilitas 95% sampai dengan hari berikutnya. Maka, Jika diperoleh VaR yang akurat, maka kerugian penurunan dari nilai portofolio lebih rendah atau sama dari ukuran tersebut terjadi dengan keyakinan 95% (Hendricks, 1995)

Jorion (2001) menyatakan bahwa *holding period* adalah jangka waktu ke depan dalam satuan hari *VaR* dihitung. Pemilihan *holding period* apakah satu bulan atau satu hari sangat subyektif dan tergantung pada bisnis bank atau institusi keuangan dan juga tergantung pada jenis portofolio yang akan dianalisa. Idealnya, *holding period* dihubungkan dengan periode terpanjang yang diperlukan untuk melikuidasi portfolio tertentu (Jorion, hal.24, 2001)

Penentuan *holding period* tergantung pada bagiamana dan apa yang akan direpresentasikan dalam penggunaan VaR. *Holding period* sebesar satu hari merupakan basis perhitungan *VaR*, karena berapapun *holding period*-nya, *VaR* akan dikalikan dengan *VaR* pada posisi *holding period* satu hari. *VaR* adalah potensi kerugian pada portofolio pada 1 hari mendatang dengan mengasumsikan ukuran dan komposisi dari portofolio tetap konstan.

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2.3.4. Pengukuran Volatilitas

Pengukuran volatilitas yang digunakan adalah

1. Volatilitas Konstan (*Constant Volatility*) : Standar Deviasi (*Standard Deviation*), Rata-rata Bergerak Sederhana (*Simple Moving Average*), *Historical Simulation*
2. Volatilitas Tidak Konstan (*Non-Constant Volatility*) : *Generalized Autoregresive Conditional Heteroskedastic* (GARCH)

2.3.4.1. Volatilitas Konstan

Untuk mendapatkan nilai *VaR* dari setiap metode, dibutuhkan pengukuran volatilitas yang berpengaruh langsung terhadap nilai *VaR* yang dihasilkan. Volatilitas yang umumnya digunakan adalah:

2.3.4.1.1. Model Estimasi Volatilitas *Standard Deviation*

Standar deviasi digunakan untuk menghitung volatilitas data yang memiliki distribusi normal. Standar deviasi mengukur penyebaran distribusi yang merupakan jarak rata-rata perubahan harga terhadap mean sebagai puncak. Asumsi metode ini adalah merupakan estimasi nilai konstan dari volatilitas (Steel, 1991, 28)

$$\sigma^2 = \frac{\sum_{j=1}^{i} (x_i - u)^2}{n} \qquad (2.6)$$

dimana

σ_2 : varian portfolio

xi : variabel ke i

μ : *mean*

n : jumlah variabel

Nilai n digunakan sebagai bobot dari dalam memperhitungkan varian dari populasi, untuk perhitungan pada sampel data yang digunakan adalah n-1. Penggunaan n-1 dalam perhitungan ini karena adanya kenyataan bahwa varian diperkirakan berada sekitar parameter yang tidak diketahui yaitu nilai rata-rata atau μ, oleh sebab itu diperlukan *adjustment* terhadap nilai varian dari sampel tersebut, akan tetapi dalam banyak situasi nilai n besar sehingga *adjustment* tidak banyak berarti.

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2.3.4.2. Volatilitas Tidak Konstan

Asumsi volatilitas dan korelasi biasanya konstan, tetapi kenyataannya volatilitas dan korelasi pada data keuangan adalah tidak konstan, kadang menunjukan ketidakteraturan. Bisa saja pada suatu periode volatilitasnya rendah namun berikutnya diikuti dengan volatilitas tinggi. Hal ini disebut dengan *volatility clustering*.

2.3.4.2.1. *Generalized Autoregressive Conditional Heteroskedasticity* (GARCH)

ARCH = *Auto Regressive Conditional Heteroscedasticity*, GARCH = *Generalized Auto Regressive Conditional Heteroscedasticity*. ARCH – GARCH model telah digunakan secara luas dalam analisa *time series*, tapi penerapan dalam *finance* telah secara sukses menjadi fokus dari pengenalan model ini. Keputusan Financial telah umum menjadi pertukaran antara resiko dan *return*. Analsia ekonomi dari suatu risiko telah menjadi keseluruhan dari *asset pricing*, optimalisasi dari portfolio, *options pricing*, dan manajemen risiko.

Model ARCH diperkenalkan oleh Engle (1982), sedangkan model GARCH yang merupakan model generalisasi ARCH diperkenalkan oleh Bollerslev (1986). Model ini dirancang untuk membuat suatu model dan melakukan peramalan terhadap *time series* waktu yang mengandung *conditional variance*. Varian dari variabel tidak bebas dibentuk dengan menggunakan nilai dari variabel tidak bebas dan variabel bebas periode sebelumnya.

Pada data runtun waktu keuangan, keberadaan ARCH atau suatu bentuk autoregresi dari kuadrat residual biasanya ditandai dengan adanya *fat tail* (*excess curtosis*) atau *volatility clustering*. *Fat tail* ditandai dengan distribusi probabilitas return yang menunjukan tail yang lebih gemuk dibandingkan distribusi normal.

Model ini mengasumsikan bahwa *return* dihasilkan oleh proses *stochastic* dengan *time-varying volatility*, *variance* dari *return* akan mengikuti proses yang dapat diprediksi. Model GARCH mempersyaratkan kondisi *heteroskedastic* dalam suatu perubahan *variance*.

Proses ARCH (p) menangkap *conditional heteroskedasticity* dari *financial return* dengan mengasumsikan bahwa *conditional variance* hari ini merupakan rata-rata tertimbang dari *past squared unexpected return*:

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$$\sigma^2_t = \alpha_0 + \alpha_1\varepsilon^2_{t-1} + ... + \alpha_p\varepsilon^2_{t-p} \quad (2.7)$$

dimana:

$\alpha_0 > 0, \alpha_1, ..., \alpha_p \geq 0$

α_1 = *slope*

ε_t = residual pada waktu t

Model ARCH jarang digunakan pada pasar financial karena dengan mengggunakan GARCH sederhana *performance* model sangat baik. Model GARCH (p,q) menambahkan q *autoregressive terms* di spesifikasi ARCH (p) sehingga persamaan *conditional variance* menjadi:

$$\sigma^2_t = \alpha_0 + \alpha_1\varepsilon^2_{t-1} + ...+ \alpha_p\varepsilon^2_{t-p} + \beta_1\sigma^2_{t-1} + ...+ \beta_q\sigma^2_{t-q} \quad (2.8)$$

dimana:

$\alpha_0 > 0, \alpha_1, ..., \alpha_p, \beta_1, ..., \beta_q \geq 0$

α_p = *error coefficient* pada waktu ke-p

ε_t = *residual*

β_q = *lag coefficient*

Model *Generic* GARCH memiliki hipotesis bahwa estimator volatilitas bergantung pada nilai *lag* kuadrat *return* dan *lag* estimasi volatilitas (Dowd, hal 93, 1999):

$$\sigma^2_t = \alpha_0 + \sum_{i=0}^{p} \alpha_i r^2_{t-1} + \sum_{i=1}^{q} \beta_i\sigma^2_{t-1} \quad (2.9)$$

dengan asumsi semua parameter adalah positif. Estimator GARCH (1,1) diperoleh bila p = q = 1 dan model ini sering disebut dengan *generic* atau *vanilla* model GARCH:

$$\sigma^2_t = \alpha_0 + \alpha_i\varepsilon^2_{t-1} + \beta_i\sigma^2_{t-1} \quad (2.10)$$

dimana:

σ^2_t = *forecast* varian pada saat t

ε^2_{t-1} = *residual* saat t-1

α_0 = konstanta > 0, $\alpha, \beta \geq 0$

Nilai α dan β menunjukan *short-run dynamic* dari hasil *time series* volatilitas. Semakin tinggi β menunjukan bahwa *shock* pada *variance* akan membutuhkan waktu lama untuk kembali. Semakin tinggi α menunjukan bahwa reaksi volatilitas sangat intensif terhadap pergerakan pasar. Apabilan nilai α tinggi dan β rendah maka volatilitas cenderung *spiky* (Alexander, hal 73, 2001).

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2.3.4.2.2. *Exponential Weighted Moving Average* (EWMA)

EWMA adalah pendekatan *forecasting* volatilitas dengan melakukan estimasi volatilitas di masa datang dimana data observasi terkini diberikan bobot yang lebih besar dibandingkan dengan data lampau. Pembobotan ini didasari asumsi bahwa data terkini memberikan informasi kondisi pasar yang lebih baik dibandingkan dengan data masa lampau (Marrison, hal.134,2002)

Forecast volatilitas merupakan rata-rata tertimbang dari *forecast* volatilitas periode sebelumnya dan kuadrat *return* saat ini. Morgan (1996) mempunyai persamaan pendekatan EWMA adalah sebagai berikut:

$$\sigma^2_t = \lambda\sigma^2_{t-1} + (1-\lambda)r^2_t \quad (2.11)$$

dimana:

σ^2_t = varian dari *return* pada waktu t

r_t = *return* pada waktu t

λ = parameter *decay factor*

Untuk menghitung *forecast* volatilitas dilakukan dengan mengakarkan persamaan (2.11) sehingga menjadi:

$$\sigma_t = \sqrt{\lambda\sigma^2_{t-1} + (1-\lambda)r^2_t} \quad (2.12)$$

dimana:

σ_t = *forecast volatility* pada hari t

Dua persamaan (2.12) di atas, yaitu $\lambda\sigma^2_{t-1}$ yang menunjukan *persistency* dari volatilitas, bila volatility hari kemarin tinggi maka hari ini juga tetap tinggi. Bagian yang kedua $(1-\lambda)r^2_t$ menunjukan intensitas reaksi volatilitas terhadap kondisi pasar. Semakin kecil λ maka semakin reaktif volatilitas terhadap informasi pasar mengenai *return* kemarin.

Parameter λ (*decay* factor) menunjukan skala bobot dari pengamatan data terbaru dengan data sebelumnya dengan nilai $0 < \lambda < 1$. Semakin tinggi λ akan semakin besar bobot yang dikenakan pada data lampau sehingga data series semakin *smooth*. Bila λ mendekati 1, maka volatilitas akan semakin *persistence* mengikuti *market shock* (Alexander, hal.58, 2001)

Nilai λ ditentukan dengan *Root Mean Squared Error* (RMSE), dimana λ ditentukan sedemikian sehingga *error* antara nilai variabel random dengan volatilitasnya

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

pada saat yang sama mempunyai nilai terkecil. Menurut Morgan (hal.98, 1996), *decay factor optimum* ditentukan dengan persamaan:

$$\text{RMSE} = \sqrt{1/T \sum_{T=1}^{T} (R^2_{T+1} - \sigma^2_{T+1|T}(\lambda))^2} \quad (2.13)$$

dimana:

$\sigma^2_{T+1|T}$ = $(\lambda x F(t/(t-1)) + (1-\lambda) x X_t)$

$F(t/(t-1))$ = *forecast variance* t-1

X_t = *variance return* pada waktu t

Dalam *Risk Metrics* sistem, λ yang dipakai adalah 0,94 untuk data observasi harian, dan 0,97 untuk data observasi bulanan.

BAB III
DATA DAN METODOLOGI PENELITIAN

Bab ini menguraikan tentang gambaran perusahaan secara umum, visi, misi dan strategi bisnis perusahaan, kinerja umum perusahaan, strategi manajemen risiko, strategi manajemen risiko nilai tukar, dan metode penelitian

3.1. Gambaran Umum Perusahaan

PT Bank ABC berdiri pada tanggal 16 Desember 1895 dan merupakan salah satu bank tertua di Indonesia. PT Bank ABC ini didasarkan pelayanan pada masyarakat kecil sampai sekarang tetap konsisten, yaitu dengan fokus pemberian fasilitas kredit kepada golongan pengusaha kecil. Hal ini tercermin pada perkembangan penyaluran KUK pada tahun 1994 sebesar Rp. 6.419,8 milyar yang meningkat menjadi Rp. 8.231,1 milyar pada tahun 1995 dan pada tahun 1999 sampai dengan bulan September sebesar Rp. 20.466 milyar.

Dengan perkembangan dunia perbankan yang semakin pesat maka sampai saat ini PT Bank ABC mempunyai Unit Kerja yang berjumlah 4.447 buah, yang terdiri dari 1 Kantor Pusat, 12 Kantor Wilayah, 12 Kantor Inspeksi/SPI, 170 Kantor Cabang (Dalam Negeri), 145 Kantor Cabang Pembantu, 1 Kantor Cabang Khusus, 1 New York Agency, 1 Caymand Island Agency, 1 Kantor Perwakilan Hongkong, 40 Kantor Kas Bayar, 6 Kantor Mobil Bank, 193 *Payment Point*, 3.705 BANK ABC Unit dan 357 Pos Pelayanan Desa.

3.1.1. Visi dan Misi PT Bank ABC

Visi PT Bank ABC adalah menjadi bank komersial terkemuka yang selalu mengutamakan kepuasan nasabah. Misi PT Bank ABC adalah sebagai berikut :

- Melakukan kegiatan perbankan yang terbaik dengan mengutamakan pelayanan kepada usaha mikro, kecil dan menengah untuk menunjang peningkatan ekonomi masyarakat.
- Memberikan pelayanan prima kepada nasabah melalui jaringan kerja yang tersebar luas dan didukung oleh sumber daya manusia yang profesional dengan melaksanakan praktek *good corporate governance*.
- Memberikan keuntungan dan manfaat yang optimal kepada pihak-pihak yang berkepentingan.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

3.1.2. Manajemen Risiko

Kegiatan usaha PT Bank ABC senantiasa dihadapkan pada risiko-risiko yang berkaitan erat dengan fungsinya sebagai lembaga intermediasi, sehingga operasional PT Bank ABC harus dikelola secara memadai agar tidak menimbulkan kerugian yang melebihi kemampuan PT Bank ABC. Risiko-risiko tersebut meliputi rsiko kredit, risiko pasar, risiko likuiditas, risiko operasional, risiko hukum, risiko kepatuhan, risiko strategi dan risiko reputasi.

3.1.2.1. Organisasi Manajemen Risiko

Dalam mengelola risiko, PT Bank ABC telah membangun sistem manajemen risiko terpadu dan menyeluruh. Penerapan sistem manajemen risiko terpadu merupakan salah satu komitmen Direksi PT Bank ABC untuk meminimalkan potensi kerugian yang dihadapi oleh PT Bank ABC.

Manajemen risiko memiliki peran penting dalam pengelolaan bank guna pencapaian tujuan perusahaan melalui 2 (dua) aspek, yaitu melindungi modal dan mengoptimalkan hubungan *risk* dan *return*.

Pengelolaan manajemen risiko PT Bank ABC sejalan dengan penerapan model tiga garis pertahanan (*three lines of defense*) yaitu:

1. Risk taking units (unit kerja operasional) sebagai garis pertahanan pertama, adalah pihak yang bertanggung jawab melaksanakan fungsi pengendalian intern dan menjaga kualitas *output* dan proses bisnis sesuai dengan kebijakan dan prosedur yang telah ditetapkan. Unit kerja operasional melakukan pengendalian secara langsung terhadap inherent risk, sehingga diharapkan dapat meminimalkan residual risk.
2. Unit kerja manajemen risiko sebagai garis pertahanan kedua adalah unit kerja yang bertanggung jawab mengendalikan risiko agar eksposur secara keseluruhan tidak melampaui kemampuan modal PT Bank ABC. Pengendalian risiko tersebut dilakukan antara lain dengan penetapan dan pemantauan limit risiko.
3. Satuan Kerja Audit Intern sebagai garis pertahanan ketiga bertanggung jawab untuk memastikan efektivitas penerapan sistem pengendalian intern pada unit-unit kerja baik unit kerja operasional maupun unit kerja manajemen risiko.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

3.1.2.2. Kebijakan Umum Manajemen Risiko

Kebijakan Umum Manajemen Risiko (KUMR) adalah aturan tertinggi dalam implementasi manajemen risiko pada seluruh kegiatan PT Bank ABC, baik yang bersifat konvensional maupun yang berdasarkan atas prinsip-prinsip syariah. KUMR PT Bank ABC mengatur hal-hal yang terkait dengan organisasi manajemen risiko, proses manajemen risiko (identifikasi, pengukuran, pemantauan dan pengendalian), integrasi manajemen risko, sistem informasi manajemen risiko, sistem pengendalian intern, pengelolaan risiko produk dan aktivitas baru dan rencana darurat (*contigency plan*). KUMR PT Bank ABC yang telah direvisi untuk merubah struktur organisasi unit kerja operasional yang semula hanya satu kelompok *risk taking unit* menjadi *core risk taking unit* dan *supporting risk taking unit*.

3.1.2.3. Strategi Manajemen Risiko

Untuk memasitkan agar aktivitas pengendalian risiko bisnis PT Bank ABC telah dilakukan secara memadai dengan memperhatikan kepentingan dan tujuan bisnis PT Bank ABC sebagaimana yang telah ditetapkan dalam KUMR PT Bank ABC maka Direksi PT Bank ABC menetapkan strategi manajemen risiko. Strategi manajemen risiko PT Bank ABC meliputi:

- penetapan parameter dan limit risiko
- perencanaan dan penerapan langkah-langkah mitigasi (*actions plan*) yang dibutuhkan dengan hasi penilaian kondisi eksposur risiko (profil risiko) yang dimiliki PT Bak ABC pada satu periode.

Limit-limit risiko tersebut diatas ditetapkan dan dikaji ulang secara berkala untuk memastikan bahwa profil risiko yang ada mendukung proses pencapain target kinerja PT Bank ABC dengan tetap memperhatikan tingkat toleransi risiko.

3.1.2.4. Profil Risiko

Penilaian risiko PT Bank ABC secara agregat melalui proses *self assessment* menghasilkan profil risiko. Profil risiko tersebut terdiri dari *inherent risk* (risiko yang melekat pada aktivitas bank sebelum dilakukan kontrol) dan *risk control system* (pengendalian terhadap risiko inheren) terhadap 8 (delapan) jenisi risiko pada 7 (tujuh) aktivitas fungsional PT Bank ABC yaitu aktivitas fungsional perkreditan, *treasury*, *trade*

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

finance, pendanaan, operasional dan jasa, *IT System* dan support. Profil risiko PT Bank ABC secara keseluruhan selama tahun 2007 berada pada kategori rendah (*low*).

Untuk menurunkan *risk composite* pada profil risiko PT Bank ABC, PT Bank ABC terus menyempurnakan penerapan *framework*, *governance* dan beberapa perangkat manajemen risiko operasional. Disamping itu, PT Bank ABC selalu berupaya mengefektifkan pelaksanaan forum manajemen risiko dan fungsi manajemen risiko di tiap unit kerja serta pembentukan Group Manajemen Risiko di Kantor Wilayah.

3.1.2.5. Risk Management Committee

Dalam melakukan pengelolaan eksposur risiko bisnis PT Bank ABC dan dalam penetapan Sistem Manajemen Risiko PT Bank ABC, Direksi PT Bank ABC dibantu oleh Risk Management Committee (RMC) BANK ABC sebagai badan tertinggi dalam sistem manajemen risiko PT Bank ABC, yang bertanggung jawab untuk memberikan rekomendasi kepada Direktur Utama. Dalam rangka mengevaluasi eksposur risiko, RMC PT Bank ABC mengadakan pertemuan yang dilaksanakan sekurang-kurangnya satu kali dalam tiga bulan.

RMC ditetapkan untuk menyesuaikan dengan kebutuhan internal, dengan beberapa pokok perubahan sebagai berikut:

1. Perubahan keanggotaan RMC, dengan menetapkan Direksi PT Bank ABC sebagai anggota tetap dengan hak *voting* sedangkan pejabat setingkat di bawah Direksi merupakan anggota tetap tanpa hak *voting*. *Voting* dilakukan apabila tidak tercapai kesepakatan dalam pengambilan keputusan pada rapat RMC dan memenuhi persyaratan apabila disetujui oleh ½ + 1 dari anggota tetap dengan hak *voting* yang hadir.
2. Penambahan anggota tetap tanpa hak *voting* sehubungan dengan adanya beberapa divisi baru di kantor pusat PT Bank ABC.
3. Pengaturan tata kerja pelaksanaan sub RMC (*Credit Risk Management Committee*, *Opersional Risk Management Committee* dan Market *Risk Management Committee*)

3.1.2.6. Business Continuity Management (BCM)

Untuk menjaga kelangsungan bisnis bank, baik dalam kondisi normal maupun kondisi terjadinya bencana atau gangguan, telah mendorong PT Bank ABC untuk menerapkan

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

suatu Manajemen Kelangsungan Usaha (*Business Continuity Management*) dalam mempertahankan kelangsungan proses bisnis kritikal, menjaga aset PT Bank ABC dan memiliki respon yang memadai ketika menghadapi situasi gangguan atau bencana.

Sebagai wujud keseriusan PT Bank ABC dalam mengembagkan *Business Continuity Management* (BCM) PT Bank ABC, pada bulan Juni 2007 Direksi PT Bank ABC telah membentuk Tim Poryek Pengembangan BCM PT Bank ABC sehingga pengembangan BCM serta proses implementasinya dapat berjakan secara efektif dan efisien serta mencapai sasaran yang telah ditetapkan. Hasil yang diharapkan dari penerapan BCM yang efektif adalah:

1. PT Bank ABC mampu mengidentifikasi dampak dari suatu gangguan atau bencana
2. PT Bank ABC memiliki suatu perencanaan pemuliah (Rencana Kelangsungan Usaha/ *Business Continuity Plan*) yang mampu meminimalisasi potensi kerugian dari suatu gangguan atau bencana.
3. PT Bank ABC tetap dapat memberikan pelayanan kepada nasabah dan menjaga kelangsungan bisnis bank.
4. Koordinasi antara unit kerja PT Bank ABC dalam penanggulangan gangguan atau bencana semakin meningkat dan terintegrasi.

3.1.2.7. *Disaster Recovery Plan* (DRP)

Disaster Recovery Plan (DRP) merupakan bagian dari BCM PT Bank ABC, oleh sebab itu PT Bank ABC secara berkala melakukan pengujian yang bertujuan untuk memastikan kemampuan *host BANK ABCNETS DRC* dapat berfungsi sebagai *host production*. Untuk menguji kemampuan DRC, BANK ABC melakukan switch over secara berkala pada tahun 2007 telah dilakukan *switch over* keempat DC-DRC-DC, dengan fokus pengujian pada uji coba transaksi ATM secara *live* untuk ATM PT Bank ABC di seluruh Indonesia selama 1 jam atau 1.000 transaksi (mana yang lebih dahulu tercapai) dan uji coba pada 4 (empat) unit kerja *on line* di wilayah Jakarta dan Tabanan – Bali yaitu kantor cabang PT Bank ABC Tabanan – Bali, kantor cabang pembantu Kediri di Tabanan – Bali, kantor unit Gatot Subroto Denpasar – Bali dankantor unit Bendungan Hilir Jakarta.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

3.1.2.8. Pengelolaan Produk dan Aktivitas Baru Pengelolaan Risiko

Pengelolaan risiko pada setiap produk dan atau aktivitas baru merupakan salah satu tahapan yang harus dilalui dalam pengembangan bisnis PT Bank ABC. Tahapan ini diharpakan dapat meminimalkan potensi risiko yang tidak terduga akibat pelayanan produk atau aktivitas baru dimaksud.

Manajemen risiko berperan mengkaji usulan pengelolaan risiko pada produk dan atau aktivitas baru untuk memastikan kesiapan PT Bank ABC dalam menjalankan produk dan atau aktivitas baru dan merekomendasikan pengelolaan risiko kepada Direktur Manajemen Risiko.

3.1.2.9. Program Sosialisasi Mitigasi Risiko

Untuk menanamkan dan mengembakan paradigma bahwa yang paling bertanggung jawab terhadap pelaksanaan mitigasi risiko (*the ultimate risk owner*) atas setiap aktivitas yang dilakukan adalah unit kerja operasional, maka diperlukan upaya pengembangan budaya risiko. Divisi Manajemen Risiko sebagai unit kerja manajemen risiko perlu menempatkan diri sebagai mitra strategi untuk mendukung unit kerja operasional pengembangan budaya risiko. Dengan budaya risiko yang berkembang, kemampuan mitigasi risiko setiap insan PT Bank ABC akan meningkat. Disamping itu, unit kerja operasional akan mampu melakukan identifikasi, pengukuran, pengendalian di samping pemantauan terhadap setiap risikoyang dapat menimbulkan kerugian.

Sehubungan dengan hal tersebut, PT Bank ABC telah menerapkan aspek manajemen risko pada target penilaian kinerja pekerja, simulasi penilaian kinerja unit kerja berbasis risiko, dan secar rutin memberikan pelatihan dan sosialisasi manajemen risiko kepada seluruh pekerja PT Bank ABC.

3.2. Pengumpulan Data

Data yang dikumpulkan adalah sebagai berikut

a. Data kurs yang digunakan merupakan kurs tengah dari kurs penutupan transaksi jual dan transaksi beli Bank Indonesia untuk mata uang USD, EUR, JPY dan GBP terhadap Rupiah (IDR). Periode data kurs adalah sebanyak 1000 titik yaitu dari 12 Januari 2004 sampai dengan 31 Desember 2007.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

b. Data PDN merupakan posisi PDN akhir hari mata uang USD, EUR, JPY, dan GBP yang dimiliki PT Bank ABC tanggal 24 Desember 2007 sampai dengan 31 Desember 2007. Data PDN yang digunakan sudah dikonversi dalam Rupiah

3.2.1. Menghitung *Return* Nilai Tukar

Return nilai tukar dihitung dengan pendekatan logaritma normal dengan menggunakan persamaan (2.2)

3.3. Estimasi Volatilitas Model

Untuk melakukan perhitungan estimasi volatilitas model ARCH/GARCH, harus dilakukan beberapa pengujian terhadap data return. Adapun langkah-langkah yang dilakukan adalah sebagai berikut:

3.3.1. Uji Stationeritas

Dalam melakukan analisis *time series*, data harus berada dalam keadaan stationer, yaitu data memiliki *mean* yang konstan. Dengan demikian data cenderung bergerak atau berfluktuasi di sekitar nilai *mean*. Untuk mengamati data *time series* stationer atau tidak dapat dilakukan secara grafis melalui pola autokorelasi (*correlogram*) data tersebut. Nilai fungsi autokorelasi yang turun dengan lambat seiring dengan bertambah besarnya *lag* mengindikasikan bahwa data tidak stasioner. Pemeriksaan kestationeran melalui pengamatan pola grafik data runtun waktu maupun melalui pola autokorelasi data awal adalah pemeriksaan yang bersifat informal. Pemeriksaan yang formal dilakukan melalui uji yang lebih baik, yaitu *Unit Root Test* dengan menggunakan statistik uji *Augmented Dickey Fuller (ADF)*. Apabila terdeteksi adanya *unit root* pada tahap pengujian awal maka harus dilakukan diferensi terhadap data awal. Jika diferensi orde pertama data masih belum keadaan stasioner, dilakuan diferensi orde kedua.

Data hasil diferensi sudah stasione atau belum diuji dengan menggunakan ADF Test. Parameter yang digunakan untuk menentukan bahwa data memiliki *unit root* atau tidak adalah nilai ADF Test dibandingkan dengan 1% *critical value MacKinnon*. *Null Hypothesys* dan alternatif hipotesis adalah sebagai berikut:

H_0 : ada *unit root*/ data belum stationer, jika nilai ADF Test lebih besar dari 1% *critical value*

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

H_1 : tidak ada *unit root*/ data stationer, jika nilai ADF Test lebih kecil dari 1% *critical value*

3.3.2. Uji Normalitas

Uji normalitas dengan menggunakan *Jarque-Bera test*. Prosedur yang dilakukan adalah sebagai berikut

- H0 : Distribusi *return* nilai tukar normal
  H1 : Distribusi *return* nilai tukar tidak normal
- *Critical Value* (CV) = $\chi 2$, df : 2
- Test Statistik *Jarque-Bera*

$$JB = n \left[\frac{S^2}{6} + \frac{(K - 3)^2}{24} \right]$$

Nilai JB untuk masing masing nilai tukar diperoleh dengan bantuan *Eviews* 5

3.3.3. Uji White Heteroskedastis

Uji heteroskedastisitas dilakukan untuk melihat apakah model yang diperoleh masih terdapat autokorelasi atau tidak. Uji heteroskedastisitas dilakukan terhadap *residual* dan *kuadrat residual*.

3.3.3.1. Uji Autokorelasi Residual

Setelah mendapatkan model *mean* (*mean equation*), langkah selanjutnya adalah memeriksa keberadaan autokorelasi residual. Statistik uji yang digunakan adalah *Q-Stat* atau *Ljung-Box stat* dengan hipotesis

H0 : Tidak ada autokorelasi residual hingga lag k, jika *p-value* dari nilai *Q-Statistics* kurang dari 5%

H1 : Sekurang-kurangnya terdapat autokorelasi residual pada sebuah lag k tertentu, jika *p-value* dari nilai *Q-Statistics* lebih besar dari 5%

k : Lag tertinggi yang dipilih (untuk penelitian ini , akan digunakan angka default software versi 5 yaitu k = 36)

Apabila ditemukan *spike*, yaitu nilai autokorelasi residual yang melewati batas standar yang dibatasi oleh $2/\sqrt{T}$ dan probabiltas (*p-value*) yang besarnya kurang dari 0.05 pada sebuah *lag* tertentu, maka hal ini mengindikasikan diperlukan nilai *return* di masa

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lalu untuk diikutsertakan dalam model *mean* (*mean equation*) tentatif yang telah diperoleh sebelumnya.

3.3.3.2. Uji Autokorelasi Kuadrat Residual

Jika dari uji residual di atas berakhir pada penerimaan H_0 yang berarti tidak ditemukan lagi indikasi adanya autokorelasi residual pada setiap *lag*, maka langkah selajutnya adalah menguji keberadaan autokorelasi kuadrat residual. Uji autokorelasi kuadrat residual analog dengan uji autokorelasi residual di atas, hanya saja data runtun waktu yang digunakan untuk melakukan pengujian adalah kuadrat residual. Statistik uji yang digunakan sama, yaitu Q (*Ljung-Box stat*), dengan hipotesis:

H_1 : Sekurang-kurangnya terdapat autokorelasi residual pada sebuah *lag* k tertentu, jika *p-value* dari nilai statistik uji Q lebih besar dari 5%

K = 1,2,...,K

3.4. Permodelan ARCH/GARCH

Permodelan dengan ARCH/GARCH dilakukan jika terdapat autokorelasi pada residual. Sehingga model yang dihasilkan bersifat heteroskedastisitas atau menunjukan adanya *conditional variance* yang signifikan. Proses estimasi dilakukan untuk mencari parameter-parameter GARCH yang significan di dalam residual. Dalam proses estimasi ini perlu diperhatikan adanya batasan-batasan agar diperoleh model yang stasioner dengan *unconditional variance* tertentu dimana gerakan *conditional variance* akan menuju nilai tersebut. Proses estimasi tersebut dihentikan bila residual telah bersifat homoskedastis.

1. *Conditional Variance*

Dalam proses residual terdapat dua jenis *variance*, yaitu *conditional variance* dan *unconditional variance*. Kata conditional menunjukan ketergantungan nilai varian tersebut pada data sebelumnya dalam suatu observasi. Sedangkan *unconditional* menjelaskan karakteristik jangka panjang data *time series* dengan asumsi tidak ada pengaruh informasi masa lalu. Model GARCH mengkarakteristikan distribusi *conditional* tersebut, dapat dilihat $p = q = 0$, maka proses varian tersebut adalah *white noise* dengan varian α.

2. Homoskedastisitas dan *Unconditional Variance*

Untuk memenuhi kondisi homoskedastisitas, model ARCH/GARCH yang dibentuk harus memenuhi batasan-batasan parameter sebagai berikut (Alexander, 2001:72)

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

$$\sum_{i=1}^{q} \alpha_i + \sum_{j=1}^{p} \beta_j < 1$$

Batasan ini diperlukan agar terpenuhi kondisi stasioner. Dengan demikian akan dihasilkan *conditional variance* pada residual yang memiliki *mean* tertentu dan tidak bergantung pada waktu. Sedangkan batasan $\alpha \geq 0$, $\alpha i \geq 0$, $\beta j \geq 0$ digunakan untuk memastikan bahwa varian yang dihasilkan memiliki nilai yang selalu positif.

3.4.1. Analisis nilai *Adjusted R-Squared, AIC* dan *Schwarz Criterion*

Statistik *R-Squared* mengukur keberhasilan regresi dalam memperkirakan nilai dari variabel tidak bebas di dalam sample. Dalam keadaan standar, dapat dinterprestasikan sebagai fraksi *variance* dari variabel tidak bebas yang dijelaskan variabel bebas. Nilai statistik akan sama dengan satu jika regresi sesuai, dan nol jika tidak sesuai dengan rata-rata dari variabel tidak bebas. *R-squared* dapat bernilai negatif dengan beberapa alasan seperti, jika regresi tidak mempunyai *intercept* atau konstanta, regresi mengandung koefisien pembatas atau metoda estimasi dalam *two-stage least squares* atau ARCH.

Pengujian *Adjusted R-Squared, Akaike Info Criterion* dan *Schwarz Criterion* dilakukan untuk memeriksa validitas dari model yang dibentuk. Dengan menggunakan pengkukuran-pengukuran ini dapat diuji pengaruh variabel bebas dan *lag* terhadap variabel tak bebas dalam model yang dibentuk. Berikut ini uraian mengenai metoda tersebut.

a. *Adjusted R-squared*

Salah satu masalah menggunakan R-squared sebagai ukuran keberhasilan regresi adalah bahwa *R-Squared* tidak pernah berkurang dengan bertambahnya regresor. Nilai *Adjusted R-squared* digunakan untuk mengukur persentasi variabilitas variabel tidak bebas yang dapat dijelaksan oleh variabel-variabel bebas. Nilai *Adjusted R-squared* yang besar (mendekati satu) menunjukan model yang dibentuk telah cukup baik dan sesuai. Oleh karena itu proses pembentukan model biasanya kan terus berlanjut hingga diperoleh nilai *Adjusted R-squared* yang paling maksimal. Nilai *Adjusted R-squared* tidak pernah lebih besar dari *R-squared* dan dapat berkurang dengan bertambahnya regresor.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

b. *Akaike Info Criterion*

Akaike Info Criterion (AIC) dan *Schwarz Criterion* (SC) adalah alternatif lain dari *adjusted R-squared* yang digunakan untuk mengukur validitas model yang dihasilkan. Berlawanan dengan *adjusted R-squared*, semakin kecil nilai yang dihasilkan dari kedua parameter tersebut berarti semakin baik model yang dibentuk.

3.5. Permodelan EWMA

The exponentially weighted moving average (EWMA) adalah suatu model dimana bobot α1 menurun secara exponensial dari waktu ke waktu. Terutana jika αi+1 = λαi, dimana lamda adalah suatu nilai yang konstan antara 0 dan 1.

Skema pembobotan ini mengacu pada formula yang mudah untuk memperkirakan volatilitas. Dan formulanya adalah sebagai berikut:

$\sigma^2 = \lambda\sigma^2_{n-1} + (1-\lambda)u^2_{n-1}$

Estimasi dari σn, volatilitas dari hari ke n (dibuat pada akhir hari ke n – 1) dihitung dari σn-1 (estimasi yang dibuat pada akhir hari ke n – 2 dari suatu volatilitas untuk hari ke n-1) dan Un-1 (lebih pada perubahan persen harian).

Agar dapat lebih dimengerti mengenai bobot menurun secara eksponensial, kita mengganti untuk σ2n-1 untuk memperoleh

$\sigma^2 = \lambda(\sigma^2_{n-2} + (1-\lambda)u^2_{n-2}) + (1-\lambda)u^2_{n-1}$

$\sigma^2 = (1-\lambda)(\sigma^2_{n-2} + (1-\lambda)u^2_{n-2}) + \lambda^2 u^2_{n-1}$

Subtitusikan dengan cara yang sama seperti diatas untuk σ^2_{n-2} sehingga menjadi sebagai berikut:

$\sigma^2 = (1-\lambda)(u^2_{n-2} + \lambda u^2_{n-2} + \lambda^2 u^2_{n-3}) + \lambda^3 u^2_{n-3}$

kemudian lakukan proses seperti ini

$\sigma^2 = (1-\lambda)\Sigma\lambda^{i-1}u^2_{n-i} + \lambda^m u^2_{n-m}$

Untuk m besar, termin dari $\lambda^m u^2_{n-m}$ akan menjadi terlalu kecil untuk diabaikan sehingga persamaan tersebut akan menjadi sama seperti persamaan pertama dengan αi = (1 – λ) λi-1. Bobot ini untuk u yang menurun pada rate λ yang lalu. Setiap bobot adalah λ kali dengan bobot sebelumnya.

Pendekatan EWMA mempunyai bentuk yang atraktif yang secara relatif memerlukan data yang kecil untuk disimpan. Dengan jangka waktu yang *given*, kita memerlukan untuk mengingat hanya estimasi sekarang ini dari rata rata *variance* dan lebih

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

dari observasi sekarang ini pada nilai pasar yang variabel. Ketika kita mendapatkan observasi yang baru dari *market variable*, kita menilai perubahan persentase harian dan menggunakan persamaan dari rumus rumua siatas untuk memperbaharui estimasi kita dengan rate dari suatu *variance*. Estimasi lama dari *rate variance* dan nilai yang lebih tua dari *market variable* dapat di abaikan..

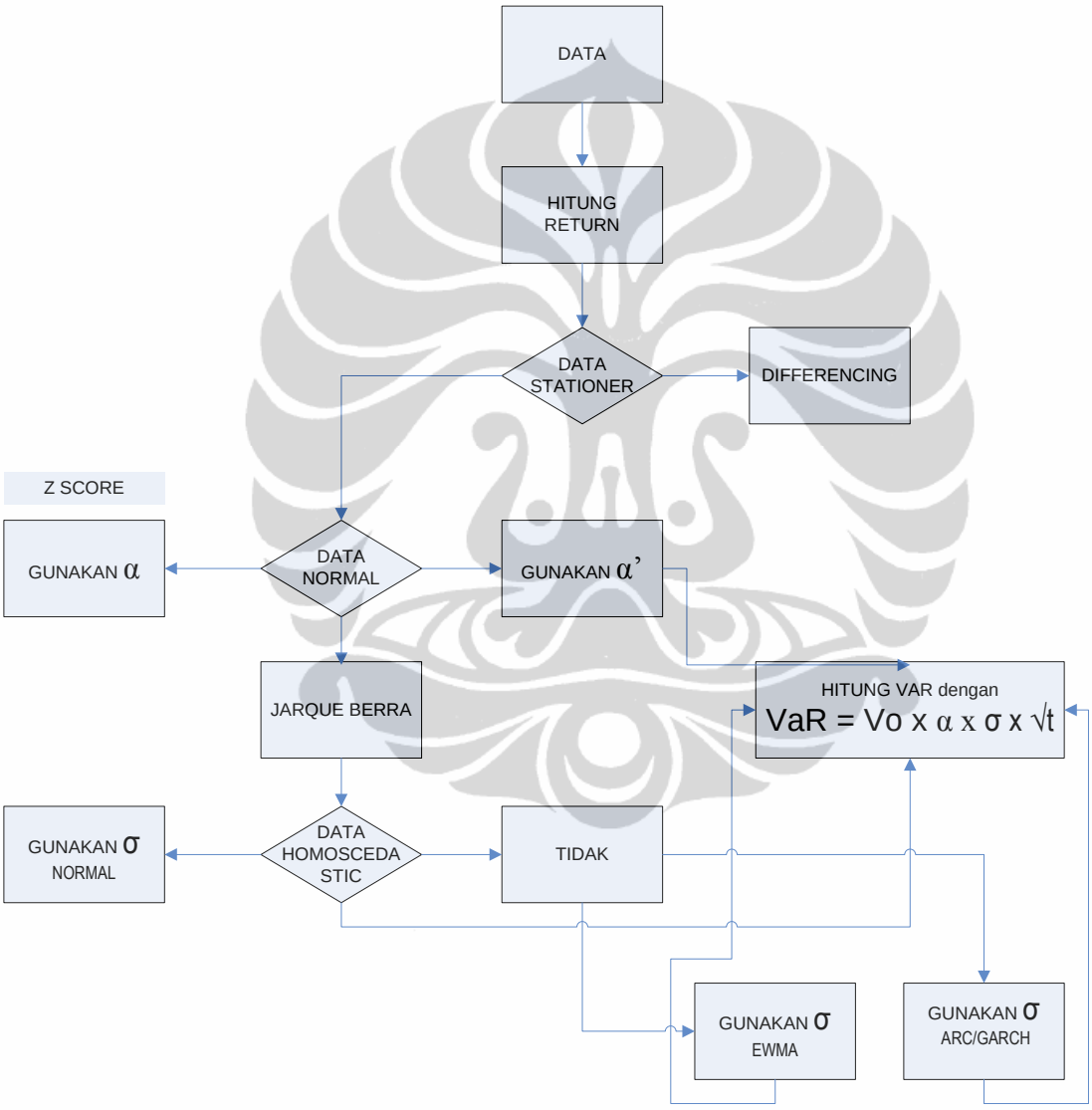
Pendekatan EWMA dirancang untuk dapat melihat perubahan dari suatu volatilitas. Diibaratkan bahwa terjadi pergerakan yang besar pada *market variable* pada hari ke n – 1, lalu U^2_{n-1} nilainya tinggi. Dari persamaan diatas tersebut mengakibatkan perkiraan volatilitas saat ini bergerak ke atas. Nilai dari *lamda* lebih responsif diperkirakan dari suatu volatilitas perubahan persentase harian. Nilai yang rendah suatu lamda mengarah kepada nilai yang bagus dari suatu bobot yng diberikan oleh U^2_{n-1} ketika σn dihitung. Dalam kasus ini, estimasi volatilitas yang diproduksi sangat *volatile* sekali. Nilai *lamda* memproduksi perkiraan volatilitas harian yang akhirnya kan menyediakan informasi yang baru dengan persentasi perubahan harian.

Riskmetrics database, dimana awalnya dibuat oleh J.P. Morgan dan dipublikasikan pada tahun 1994 ini menggunakan EWMA model dengan lamda 0,94 untuk memperbaharui perkiraan volatilitas harian dari *Riskmetrics databas*e. Perusahaan akan menemukan bahwa, nilai yang bersebrangan dengan variabel pasar yang berbeda nilai *lamda* akan memberikan perkiraan *rate* dari varian yang akan dekat dengan *rate* varian yang sebenarnya. Nilai *rate variance* yang sebenarnya dihitung secara rata rata tertimbang pada nilai u^2 pada 25 berikutnya.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

Untuk lebih jelasnya alur metodologi penelitian perhitungan VaR akan dituangkan pada gambar 3.1. berikut ini :

Gambar 3.1.PROSEDUR PENGUKURAN VaR



BAB IV
ANALISA PEMBAHASAN

Bab ini menguraikan tentang langkah-langkah pengujian data *return* untuk masing-masing nilai tukar, menghitung *VaR*, dan terakhir adalah melakukan perhitungan volatilitas dengan menggunakan model EWMA dan GARCH.

4.2. Pengujian Data *Return*

4.2.1. Penentuan Data Observasi

Data observasi yang digunakan dalam penelitian ini adalah data harian kurs pada www.bi.go.id pada 4 (empat) nilai tukar mata uang asing yaitu *United States Dollar (USD), Euro (EUR), Japanese Yen (JPY), UK Poundsterling (GBP)*. Periode penelitian adalah sebanyak 1000 titik dimulai dari tanggal 12 Januari 2004 sampai dengan 31 Desember 2007. Pemilihan nilai tukar mata uang asing tersebut didasarkan pada nilai tukar yang paling aktif diperdagangkan dalam transaksi valuta asing.

4.2.2. Penentuan Data *Return*

Return masing-masing nilai tukar dihitung dengan pendekatan *logaritma natural* dari rasio harga yang dihitung dengan persamaan (2.3). Contoh hasil perhitungan *return* untuk nilai tukar USD, EUR, JPY dan GBP terhadap IDR disajikan pada Lampiran I.

4.2.3. Pengujian Stasioneritas

Tujuan pengujian ini adalah untuk mengetahui data *retur*n empat nilai tukar yang diobservasi bersifat stasioner atau tidak. Uji stasioner dilakukan dengan *Augmented Dikey Fuller Test* atau ADF-test, jika data mengandung *unit roots* maka data tersebut belum stasioner, tetapi jika tidak mengandung *unit roots* maka data sudah stasioner. Data yang stasioner memiliki *mean* dan *variance* yang konstan yang hanya tergantung pada variabel waktu dari data yang diobservasi.

Dalam melakukan pengujian stasioner atau tidaknya data yang diobservasi, *ADF-test statistic* dibandingkan dengan *test critical values* 5%. Data yang stasioner bila nilai

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ADF-test statistik > *test critical values* 5% level. *Output ADF test* dihasilkan melalui pengolahan data *return* dengan bantuan *software Eviews 4.1*.

Dengan Hipotesis nol (Ho) data non stasioner, maka hasil perhitungan tersebut maka dihasilkan nilai *ADF Test Statistic* untuk data *return* nilai USD sebesar -33.05860 < *test critical value* 5% *level MacKinnon* sebesar – 3.414323 sehingga dari data tersebut sudah stasioner.

Tabel 4.1
Contoh Hasil Perhitungan ADF-test untuk Nilai Tukar USD

Null Hypothesis: RETURN_EUR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on AIC, MAXLAG=21)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-32.80247	0.0000
Test critical values:	1% level	-3.967261	
	5% level	-3.414318	
	10% level	-3.129280	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RETURN_EUR)
Method: Least Squares
Date: 05/13/08 Time: 14:38
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RETURN_EUR(-1)	-1.038516	0.031660	-32.80247	0.0000
C	7.34E-05	0.000424	0.172987	0.8627
@TREND(1)	3.89E-07	7.35E-07	0.530022	0.5962

R-squared	0.519307	Mean dependent var	-4.40E-07
Adjusted R-squared	0.518342	S.D. dependent var	0.009651
S.E. of regression	0.006698	Akaike info criterion	-7.171078
Sum squared resid	0.044681	Schwarz criterion	-7.156343
Log likelihood	3584.954	F-statistic	538.0048
Durbin-Watson stat	1.998885	Prob(F-statistic)	0.000000

Hasil keempat data observasi tersebut bisa dilihat di tabel 4.2. dan dilihat dari tabel tersebut bisa dilihat bahwa data yang diobservasi semuanya sudah stasioner.

Tabel 4.2.
Hasil Perhitungan ADF-test

No	*Return*	ADF-*Test*	*Critical Value* 5%	*Stationeritas*
1	USD	-33.07204	-3.414318	Stationer
2	EUR	-32.80247	-3.414318	Stationer
3	JPY	-32.73455	-3.414318	Stationer
4	GBP	-31.85177	-3.414318	Stationer

Sumber : www.bi.go.id diolah kembali dengan Eviews.

Maka langkah selanjutnya dalam pengujian data *return* ini dengan Pengujian Normalitas.

4.2.4. Pengujian Normalitas

Pengujian normalitas dilakukan untuk mengetahui apakah distribusi *return* normal atau tidak. Pengujian dilakukan dengan membandingkan nilai *Jarque-Bera (JB)* dengan *Chi Square* (χ^2) dengan *degree of freedom* 2 (df=2). Data dikatakan normal jika nilai $\alpha = 5\%$ dan df = 2 yaitu nilai χ^2 sebesar 5,99146. Dengan hipotesis nol (Ho) distribusi *return* adalah normal, jika $JB > \chi^2$ maka tolak Ho, sebaliknya jika $JB > \chi^2$ maka Ho tidak ditolak

Statistik *Jarque-Bera* (JB) secara asimtotis merupakan distribusi *Chi Square* dengan *degree of freedom* 2 pada residual yang berdistribusi norma atau probatilitasnya sekitar 0,6781. Semakin kecil probalitas statistik JB atau mendekati 0 maka hipotesis bahwa residual memiliki distribusi normal ditolak.

Jika nilai JB kurang dari nilai *Chi Square* χ^2 ($\alpha = 5\%$ dan df = 2 yaitu nilai χ^2 sebesar 5,99146 %) yang berarti data memiliki distribusi normal dan besarnya *skewness* adalah nol. Sebaliknya jika nilai $JB > \chi^2$ maka data tidak memiliki distribusi normal sehingga harus menggunakan *alpha prime* atau α'. *Alpha prime* diperoleh dengan menggunakan persamaan *Cornish Fisher Expansion* (Jorion, 2001, 213) dengan rumus sebagai berikut:

$\alpha' = \alpha - 1/6\ (\alpha^2 - 1)\ \zeta$

dimana :

α = *confidence level*

ζ = *skewness*

Hasil dari pengujian normalitas untuk data *return* nilai tukar USD menggunakan software Eviews 4.1. dapat dilihat pada Grafik 4.1. Hasil perhitungan nilai *Jarque-Bera*

untuk data *return* nilai USD diperoleh nilai 8695.679. Nilai ini lebih besar dari nilai *Chi Square* χ^2 sebesar 5,99146 %. Dapat disimpulkan dari pengujian tersebut bahwa data *return* nilai USD tersebut tidak memiliki distribusi normal.

Di bawah ini merupakan hasil dari pengujian normalitas untuk data *return* empat nilai tukar yang diobservasi pada tabel 4.3. berikut

Tabel 4.3.
Hasil Perhitungan Tes Normalitas untuk Empat Nilai Tukar

No	Return	Jarque-Bera	Probability	Chi Square (x2)	Normalitas
1	USD	8869.2600	0	5.99146	Tidak Normal
2	EUR	1000.4580	0	5.99146	Tidak Normal
3	JPY	1154.3040	0	5.99146	Tidak Normal
4	GBP	1668.1540	0	5.99146	Tidak Normal

Sumber : Bank Indonesia, diolah kembali dengan aplikasi *Eviews*

Setelah perhitungan pada Tabel 4.4 diatas, dapat disimpulkan bahwa keempat data *return* diatas tidak memiliki distirbusi normal dengan perbandingan antara nilai Jarque-Bera > Chi Square χ^2 sebesar 5,99146 %. Maka α harus dikoreksi dengan menggunakan *Cornish Fisher Expansion*. Hasil perhitungannya dapat dilihat pada Tabel 4.4.

Tabel 4.4.
Hasil Perhitungan Cornish Fisher Expansion

No	Return	Skewness (ξ)	α (0.95)	$\alpha' = \alpha - 1/6\ (\alpha 2 - 1) \times \xi$
1	USD	0.17019	1.64485	1.59648
2	EUR	-0.03791	1.64485	1.65563
3	JPY	0.26540	1.64485	1.56941
4	GBP	-0.13785	1.64485	1.68404

Sumber : Bank Indonesia, diolah kembali dengan aplikasi *Eviews*

Maka Tabel 4.4. diatas memperlihatkan nilai α' untuk data *return* USD menjadi 1,59648. Angka ini menjadi angka yang akan digunakan untuk perhitungan VaR untuk aset USD.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

4.2.5. Pengujian White Heteroskedastic

Pengujian *white test* ini adalah untuk mengetahui apakah varian *return* konstan (*homoscedastic*) atau tidak konstan (*time varying*). Apabila varian *return* ini adalah konstan maka standar deviasi dihitung dengan menggunakan standar deviasi statistik menggunakan perhitungan standar deviasi oleh *Watsham*. (persamaan 2.6).

Jika diperoleh hasil dari pengujian diatas bahwa varian adalah tidak konstan (*heteroskedastic*), maka standar deviasi harus dihitung menggunakan GARCH atau EWMA, tidak bisa menggunakan standar deviasi statistik biasa. Untuk menghitung volatilitas dengan metode GARCH (1,1) digunakan persamaan (2.7), sedangkan untuk menghitung volatilitas dengan menggunakan metode EWMA menggunakan persamaan (2.12).

Pengujian *White Test* ini menggunakan *software Eviews* 4.1 dengan melihat *Probability F-statistic* (p) pada masing-masing nilai tukar. Jika *Probability F-statistic* < 5%, maka varian data return adalah *heteroskedastic*. Sebaliknya jika *Probability F-statistic* > 5% varian data *return* adalah *homoskedastic*. Hasil perhitngan *White Test* untuk data *return* nilai tukar USD sebagai berikut:

Tabel 4.5.
Hasil Perhitungan Pengujian White Heteroscedastic Data Return USD

White Heteroskedasticity Test:

F-statistic	208.0868	Probability	0.000000
Obs*R-squared	294.3233	Probability	0.000000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 05/14/08 Time: 08:13
Sample: 3 1000
Included observations: 998

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.48E-05	3.07E-06	4.818428	0.0000
RESID_USD(-1)	0.005092	0.000566	8.997370	0.0000
RESID_USD(-1)^2	0.469248	0.026763	17.53322	0.0000

R-squared	0.294913	Mean dependent var	2.79E-05
Adjusted R-squared	0.293496	S.D. dependent var	0.000112
S.E. of regression	9.42E-05	Akaike info criterion	-15.70008
Sum squared resid	8.82E-06	Schwarz criterion	-15.68533
Log likelihood	7837.341	F-statistic	208.0868
Durbin-Watson stat	1.857990	Prob(F-statistic)	0.000000

Dari tabel diatas dapat dilihat bahwa nilai *Probability F-statistic* untuk data *return* USD sebesar 0,00000 < 5% artinya data tersebut adalah *heteroskedastic*. Tabel 4.6. merupakan rangkuman seluruh pengujian dari empat nilai tukar yang diobservasi sebagai berikut :

Tabel 4.6.
Pengujian *White Heteroskedastic Test*

No	*Return*	*Probabiliy F-Statistic*	Hasil	Kesimpulan
1	USD	0.00000	P *Value* < 5%	Data *Heteroskedastic*
2	EUR	0.00000	P *Value* < 5%	Data *Heteroskedastic*
3	JPY	0.00000	P *Value* < 5%	Data *Heteroskedastic*
4	GBP	0.00000	P *Value* < 5%	Data *Heteroskedastic*

Sumber : Bank Indonesia, diolah kembali dengan aplikasi *Eviews*

Dari tabel diatas, dapat disimpulkan bahwa ke-empat nilai tukar memiliki *Probability F-statistic* < 5% artinya data return tersebut *heteroskedastic*. Sehingga standar deviasi atau volatilitas tidak dapat dihitung dnegan menggunakan persamaan standar deviasi statistik tetapi harus menggunakan estimasi *volatilitas* GARCH atau EWMA.

4.3. Perhitungan Value At Risk (VaR)

4.3.1. Mencari Model GARCH terbaik

Dalam menentukan model GARCH yang terbaik, maka dilakukan percobaan terhadap mean dan variance process, yaitu dengan varibel AR, MA maupun ARCH dan GARCH. Model ini diperoleh dengan cara melakukan berbagai iterasi terhadap *mean* dan *variance*. Kriteria yang digunakan untuk menentukan model GARCH yang terbaik adalah parameter *Probability*, *Adjusted R-squared*, *Akaike Info Criterion* (AIC) dan *Schwarz Criterion* (SC).

Untuk mengetahui apakah variabel yang digunakan signifikan atau tidak, maka dilakukan uji signifikansi dengan *alpha* (α) sebesar 5%. Dengan hipotesis nol (Ho) variabel tidak signifikan, dan jika Probabilitas < α maka tolak. Sebaliknya jika Probabilitas ≥ α maka tidak menolak Ho. Hasil uji signifikansi untuk masing-masing nilai tukar terdapat pada Lampiran XIV.

Hasil parameter yang signifikan diperoleh dari berbagai variasi model kemudian setelah itu dilakukan pemilihan model yang terbaik berdasarkan *Adjusted R-square*, AIC dan SC tersebut. Model tersebut adalah model yang memiliki probabolity signifikan, nilai

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

parameter *Adjusted R-Square* tertinggi, nilai AIC dan SC terkecil. Lampiran XIV adalah variasi model yang ditampilkan karena memenuhi berbagai kriteria tersebut.

4.3.1.1. Model GARCH Terbaik untuk Nilai Tukar USD

Parameter yang signifikan dalam pemilihan Model GARCH terbaik untuk nilai tukar USD dengan membandingkan nilai *Adjusted R-Square*, AIC dan SC. Model terbaik dipilih berdasarkan nilai *Adjusted R-Square* tertinggi, AIC terkecil dan SC terkecil. Tetapi pemilihan tersebut dipilih setelah *probability* untuk masing masing model lebih dari 5%. Rincian model dilihat pada Tabel 4.7 berikut :

Tabel 4.7.
Model GARCH Terbaik untuk Nilai Tukar USD

Model	*Probability*	*Adjusted R^2*	*AIC*	*SC*	*Significant Model*
ARCH(1)	0.0000	-0.014901	-7.889190	-7.869543	√
ARCH(1) ARCH(2)	0.0000 0.0004	-0.000402	-7.902779	-7.878220	√
ARCH(1) GARCH(1)	0.0000 0.0000	-0.002853	-7.983616	-7.959058	√
ARCH(1) GARCH(1) GARCH(2)	0.0000 0.0647 0.0000	-0.003259	-8.003380	-7.973910	χ
ARCH(1) ARCH(2) GARCH(1)	0.0000 0.0070 0.0000	-0.003224	-7.986145	-7.956675	√
ARCH(1) ARCH(2) GARCH(1) GARCH(2)	0.0000 0.7949 0.5967 0.0000	-0.004295	-8.000144	-7.967056	χ

Sumber : BI, diolah kembali dengan Aplikasi Excell dan Eviews 4.1

Dari hasil pengujian diatas maka model yang memiliki *probability* yang signifikan, nilai parameter *Adjusted R-Square* tertinggi, nilai AIC dan SC terkecil adalam model ARCH(1) ARCH (2) GARCH (1) karena model ini memiliki 2 (dua) dari 3 (tiga) kriteria sebagai model yang terbaik.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

4.3.1.2. Model GARCH Terbaik untuk Nilai Tukar EUR

Model GARCH terbaik untuk Nilai Tukar EUR dapat dilihat dari hasil pengolahan dengan *Eviews* berikut :

Tabel 4.8.
Model GARCH Terbaik untuk Nilai Tukar EUR

Model	*Probability*	*Adjusted R^2*	*AIC*	*SC*	*Significant Model*
ARCH(1)	0.0000	-0.001595	-7.243682	-7.224035	√
ARCH(1)	0.0000	-0.002589	-7.242824	-7.218266	χ
ARCH(2)	0.2502				
ARCH(1)	0.0000	-0.003307	-7.302965	-7.278407	√
GARCH(1)	0.0000				
ARCH(1)	0.0000				
GARCH(1)	0.1082	-0.004153	-7.309612	-7.280142	χ
GARCH(2)	0.0000				
ARCH(1)	0.0000				
ARCH(2)	0.0001	-0.004140	-7.309430	-7.279973	√
GARCH(1)	0.0000				
ARCH(1)	0.0000				
ARCH(2)	0.0006	-0.005083	-7.312851	-7.278470	√
GARCH(1)	0.0000				
GARCH(2)	0.0000				

Sumber : BI, diolah kembali dengan Aplikasi Excell dan Eviews 4.1

Dari hasil diatas untuk memenuhi kriteria model yang memiliki probability yang signifikan, nilai parameter *Adjusted R-Square* tertinggi, nilai AIC dan SC terkecil adalam model adalah ARCH (1) ARCH (2) GARCH (1) tetapi berdasarkan *Parsimony Theorem* yaitu pemilihan nilai yang kecil lebih baik agar mendapatkan model yang lebih sederhana dengan selisih yang sangat kecil maka model yang dipilih adalah model ARCH (1) GARCH (1). Disamping memenuhi 2 (dua) dari 3 (tiga) kriteria dan memiliki model yang lebih simpel dibanding model-model yang lain.

4.3.1.3. Model GARCH Terbaik untuk Nilai Turkar JPY

Nilai tukar JPY mempunyai Model GARCH terbaik dengan memilih sama seperti nilai tukar yang lain yaitu berdasarkan nilai *Adjusted R-Square* tertinggi, AIC terkecil dan SC

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

terkecil. Dan berdasarkan *Parsimony Theorem* pula yang memenuhi ketiga diatas dengan perhitungan sebagai berikut:

Tabel 4.9
Model GARCH Terbaik untuk Nilai Tukar JPY

Model	*Probability*	*Adjusted R^2*	*AIC*	*SC*	*Significant Model*
ARCH(1)	0.0000	-0.002206	-7.147722	-7.128076	√
ARCH(1)	0.2588	-0.003716	-7.150183	-7.125624	χ
ARCH(2)	0.0577				
ARCH(1)	0.0000	-0.003865	-7.1941	-7.169541	√
GARCH(1)	0.0000				
ARCH(1)	0.0000	-0.004734	-7.194922	-7.165452	√
GARCH(1)	0.0005				
GARCH(2)	0.0088				
ARCH(1)	0.0000	-0.004612	-7.197465	-7.167995	√
ARCH(2)	0.0007				
GARCH(1)	0.0000				
ARCH(1)	0.0000	-0.006359	-7.37849	-7.344109	χ
ARCH(2)	0.0032				
GARCH(1)	0.0000				
GARCH(2)	0.9073				

Sumber : BI, diolah kembali dengan Aplikasi Excell dan Eviews 4.1

Dari Tabel 4.9 diatas dapat disimpulkan sebagai model yang terbaik adalah ARCH (1) GARCH (1) karena semua kriteria nilai *Adjusted R-Square* tertinggi, AIC terkecil dan SC terkecil terpenuhi.

4.3.1.4. Model GARCH Terbaik untuk Nilai Tukar GBP

Untuk model GARCH terbaik Nilai Tukar GBP sama seperti dua pengujian sebelumnya yaitu parameter nilai *Adjusted R-Square*, AIC dan SC. Model terbaik dipilih berdasarkan nilai *Adjusted R-Square* tertinggi, AIC terkecil dan SC terkecil seperti hasil perhitungan di bawah ini:

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

Tabel 4.10
Model GARCH Terbaik untuk Nilai Tukar GBP

Model	*Probability*	*Adjusted R^2*	*AIC*	*SC*	*Significant Model*
ARCH(1)	0.0000	-0.003397	-7.343471	-7.323824	√
ARCH(1)	0.0000	-0.004248	-7.344743	-7.320184	χ
ARCH(2)	0.1347				
ARCH(1)	0.0000	-0.004205	-7.373515	-7.348956	√
GARCH(1)	0.0000				
ARCH(1)	0.0000	-0.005299	-7.380355	-7.350885	χ
GARCH(1)	0.0516				
GARCH(2)	0.0000				
ARCH(1)	0.2026	-0.005114	-7.376638	-7.347168	χ
ARCH(2)	-0.1125				
GARCH(1)	0.8710				
ARCH(1)	0.1974	-0.006359	-7.378490	-7.344109	χ
ARCH(2)	0.0171				
GARCH(1)	0.0948				
GARCH(2)	0.5987				

Sumber : BI, diolah kembali dengan Aplikasi Excell dan Eviews 4.1

Hasil dari pengolahan *Eviews* diatas maka untuk yang memenuhi kriteria sebagai model yang terbaik adalah ARCH (1) GARCH (1) karena memiliki semua kriteria sebagai model yang terbaik yaitu nilai *Adjusted R-Square*, AIC dan SC. Model terbaik dipilih berdasarkan nilai *Adjusted R-Square* tertinggi, AIC terkecil dan SC terkecil. Sementara untuk model ARCH – GARCH yang lain mempunyai probability yang tidak signifikant karena lebih dari 5%.

4.3.1.5. Model GARCH Terbaik untuk Semua Nilai Tukar

Setelah mendapatkan model yang terbaik untuk semua nilai tukar maka selanjutnya melakukan *forecast variance* masing masing nilai tukar dengan menggunakan persamaan (2.9).

Model terbaik untuk semua nilai tukar berdasarkan percobaan-percobaan dengan rincian pada tabel 4.11 berikut :

Tabel 4.11
Model GARCH Terbaik untuk Semua Nilai Tukar

Nilai Tukar	*Model*	*Probability*	*Adjusted R^2*	*AIC*	*SC*
USD	ARCH(1)	0.0000	-0.003224	-7.986145	-7.956675
	ARCH(2)	0.0070			
	GARCH(1)	0.0000			
EUR	ARCH(1)	0.0000	-0.004140	-7.309430	-7.279973
	ARCH(2)	0.0001			
	GARCH(1)	0.0000			
JPY	ARCH(1)	0.0000	-0.003865	-7.194100	-7.169541
	GARCH(1)	0.0000			
GBP	ARCH(1)	0.0000	-0.004205	-7.373515	-7.348956
	GARCH(1)	0.0000			

Sumber : BI, diolah kembali dengan Aplikasi Excell dan Eviews 4.1

Akar dari *forecast variance* adalah volatilitas return untuk masing-masing nilai tukar. Hasil dari pengolahan melalui *software Eviews 4.1* diperoleh nilai *forecast variance* dan volatilitas untuk masing masing nilai tukar pada Lampiran XXVII.

Hasil dari *forecast variance* dan volatilitas nilai tukar digunakan untuk perhitungan VaR untuk masing-masing nilai tukar. *Confidence level* yang digunakan dalam asumsi perhitungan VaR adalah 95% dan menggunakan *holding period* 1 hari. Hasil perhitungan secara lengkap VaR untuk semua nilai tukar dengan estimasi volatilitas GARCH ada pada Lampiran XXXVII.

Sehingga perlu dilakukan perhitungan dari parameter-parameter yang telah diuji dan dilakukan iterasi dalam model GARCH untuk masing-masing nilai tukar yang diobservasi. Dalam perhitungan ini VaR dengan estimasi volatilitasnya dikalikan satu sama lain sehingga menghasilkan total nilai VaR.

Di bawah ini adalah sebagian hasil perhitungan VaR dengan estimasi volatilitas GARCH untuk semua nilai tukar yang diobservasi pada tanggal 1 sampai dengan 4 Januari 2008.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

Tabel 4.12.
Hasil Perhitungan VaR Harian dengan Estimasi Volatilitas GARCH
Tanggal 24 Desember sd 31 Desember 2007

Nilai Tukar	Tanggal	Forecast Volatilitas	Posisi(Rp. Juta)	α'	Holding Period	VaR (Rp. Juta)
USD	24-Dec-07	0.0000169556	983,902,650,000.00	1.5964754658	1	26,633,382.65
	27-Dec-07	0.0000052448	828,549,600,000.00	1.5964754658	1	6,937,589.49
	28-Dec-07	0.0000106165	517,843,500,000.00	1.5964754658	1	8,776,892.94
	31-Dec-07	0.0000114757	1,035,687,000,000.00	1.5964754658	1	18,974,513.88
EUR	24-Dec-07	0.0000072115	133,459,200,000.00	1.6556308019	1	1,593,457.29
	27-Dec-07	0.0000175948	250,236,000,000.00	1.6556308019	1	7,289,509.02
	28-Dec-07	0.0000202667	200,188,800,000.00	1.6556308019	1	6,717,184.04
	31-Dec-07	-0.0000012234	166,824,000,000.00	1.6556308019	1	-337,904.30
JPY	24-Dec-07	0.0000010586	777,700,000.00	1.5694130471	1	1,292.08
	27-Dec-07	0.0000003363	1,025,150,000.00	1.5694130471	1	541.13
	28-Dec-07	0.0000008994	388,850,000.00	1.5694130471	1	548.89
	31-Dec-07	0.0000021748	707,000,000.00	1.5694130471	1	2,413.10
GBP	24-Dec-07	0.0000033478	15,447,120,000.00	1.6840383254	1	87,089.06
	27-Dec-07	0.0000025051	9,902,000,000.00	1.6840383254	1	41,772.78
	28-Dec-07	0.0000031621	23,764,800,000.00	1.6840383254	1	126,549.29
	31-Dec-07	0.0000046502	19,804,000,000.00	1.6840383254	1	155,087.56

Sumber : BI, diolah kembali dengan Aplikasi Excell dan Eviews 4.1

4.3.2. Menghitung VaR dengan Estimasi Volatilitas EWMA

Dalam melakukan *forecast volatility*, yang pertama harus dilakukan adalah mencari decay factor optimum. *Decay factor optimum* adalah *decay factor* yang memberikan *Root Mean Square Error* (RMSE) terkecil. Cara menghitungnya dengan menggunakan persamaan (2.13).

Trial and error nilai λ dalam persamaan (2.11) untuk masing masing nilai tukar kemudian λ yang memberikan nilai RMSE yang terkecil dipilih sebagai *decay factor optimum*. Penentuan *decay factor optimum* dari RMSE yang terkecil untuk data return ke-empat nilai tukar yang di observasi dapat dilihat pada lampiran XLVI

. Decay factor yang optimum tersebut ditampilkan pada tabel 4.13. sebagai berikut:

Tabel 4.13
Decay Factor Optimum

No	Return	RMSE	Decay Factor (λ)
1	USD	0.0000122012	0.68
2	EUR	0.0000134916	0.93
3	JPY	0.0000179142	0.93
4	GBP	0.0000143173	0.90

Sumber : BI, diolah kembali dengan Aplikasi Excell

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

Dari table 4.14, dapat diketahui bahwa USD memiliki *decay factor optimum* yang paling rendah yaitu sebesar 0,68. Decay factor optimum yang paling tinggi dimiliki oleh nilai tukar EUR dan JPY yaitu sebesar 0,93, GBP memiliki decay factor optimum sebesar 0.90.

Setelah mendapatkan nilai *decay factor optimum*, selanjutnya melakukan *forecast variance* dan volatilitas. Contoh perhitungan *forecast variance* disajikan dalam tabel 4.14 berikut:

Tabel 4.14
Hasil Perhitungan Forecast Variance dan Volatilitas Harian
Dengan Estimasi Volatilitas EWMA

Nilai Tukar	Tanggal	Return	Forecast Variance	Volatility
USD	24-Dec-07	-0.0022074404	0.0000305531	0.0055274899
	27-Dec-07	-0.0000125982	0.0000208862	0.0045701388
	28-Dec-07	0.0022729472	0.0000144321	0.0037989649
	31-Dec-07	-0.0038965122	0.0000126912	0.0035624701
EUR	24-Dec-07	-0.0002126940	0.0000232848	0.0048254302
	27-Dec-07	0.0070571589	0.0000251411	0.0050140888
	28-Dec-07	0.0104026991	0.0000309563	0.0055638423
	31-Dec-07	0.0054482852	0.0000308673	0.0055558315
JPY	24-Dec-07	-0.0108170171	0.0000558568	0.0074737393
	27-Dec-07	-0.0015852615	0.0000521227	0.0072196065
	28-Dec-07	0.0103095541	0.0000559142	0.0074775806
	31-Dec-07	0.0075721798	0.0000560139	0.0074842415
GBP	24-Dec-07	-0.0038686904	0.0000306474	0.0055360130
	27-Dec-07	0.0020903916	0.0000288080	0.0053673085
	28-Dec-07	0.0061339238	0.0000294252	0.0054244993
	31-Dec-07	-0.0025162580	0.0000278086	0.0052733896

Sumber: BI, diolah kembali dengan aplikasi Excel

Dari tabel 4.14 tersebut diketahui bahwa *forecast variance* dan volatilitas untuk data *return* nilai tukar USD tanggal 31 Desember 2007 adalah sebesar 0,0000144321 dan 0,0035624701. Untuk data *return* niai tukar EUR tanggal 31 Desember 2007 adalah sebesar 0,0000308673 dan 0,0055558315, untuk nilai tukar JPY sebesar 0,0000560139 dan 0,0074842415, sementara untuk nilai tukar GBP sebesar 0,0000278086 dan 0,0052733896.

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

Hasil perhitungan *forecast variance* dan volatilitas ke-empat nilai tukar dapat dilihat pada Lampiran. Setelah mendapatkan hasil dari *forecast variance* dan volatilitas untuk masing masing nilai tukar, selanjutnya dilakukan perhitungan VaR untuk masing masing nilai tukar. Asumsi *confidence level* 95% ddan *holding period* 1 hari.

Hasil perhitungan VaR untuk nilai tukar USD dapat dilihat dari lampiran X. Kemudian hasil perhitungan VaR untuk masing masing nilai tukar dari tanggal 24 Desember 2007 – 31 Desember 2007:

Tabel 4.15
Hasil Perhitungan VaR Harian dengan Estimasi Volatilitas EWMA
Tanggal 24 Desember sd 31 Desember 2007

Nilai Tukar	Tanggal	Forecast Volatilitas	Posisi (Rp. Juta)	α'	Holding Period	VaR (Rp. Juta)
USD	24-Dec-07	0.0055274899	983,902,650,000.00	1.5964754658	1	8,682,450,920.72
	27-Dec-07	0.0045701388	828,549,600,000.00	1.5964754658	1	6,045,192,782.42
	28-Dec-07	0.0037989649	517,843,500,000.00	1.5964754658	1	3,140,697,110.04
	31-Dec-07	0.0035624701	1,035,687,000,000.00	1.5964754658	1	5,890,362,162.45
EUR	24-Dec-07	0.0048254302	133,459,200,000.00	1.6556308019	1	1,066,223,020.95
	27-Dec-07	0.0050140888	250,236,000,000.00	1.6556308019	1	2,077,329,132.15
	28-Dec-07	0.0055638423	200,188,800,000.00	1.6556308019	1	1,844,072,902.62
	31-Dec-07	0.0055558315	166,824,000,000.00	1.6556308019	1	1,534,514,853.85
JPY	24-Dec-07	0.0074737393	777,700,000.00	1.5694130471	1	9,121,941.94
	27-Dec-07	0.0072196065	1,025,150,000.00	1.5694130471	1	11,615,507.91
	28-Dec-07	0.0074775806	388,850,000.00	1.5694130471	1	4,563,315.18
	31-Dec-07	0.0074842415	707,000,000.00	1.5694130471	1	8,304,327.41
GBP	24-Dec-07	0.0055360130	15,447,120,000.00	1.6840383254	1	144,011,307.44
	27-Dec-07	0.0053673085	9,902,000,000.00	1.6840383254	1	89,501,734.81
	28-Dec-07	0.0054244993	23,764,800,000.00	1.6840383254	1	217,092,984.49
	31-Dec-07	0.0052733896	19,804,000,000.00	1.6840383254	1	175,871,207.28

Sumber : BI, diolah kembali dengan Aplikasi Excell dan Eviews 4.1

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

BAB V
KESIMPULAN

Bab ini akan menguraikan kesimpulan dan saran dari penelitian yang telah dilakukan sebagai berikut:

1. Dari hasil pengujian yang dilakukan diketahui bahwa data *return* untuk USD, EUR, JPY, GBP selama periode penelitian dari 12 Januari 2004 sampai dengan 31 Desember 2007 semua datanya memiliki data yang stasioner, memiliki distribusi tidak normal dan volatilitas bersifat heteroskedastic.

2. Berdasarkan estimasi volatilitas GARCH, dengan confidence level 95% maka potensi kerugian maksimum PT Bank X pada tanggal 31 Desember 2007 dengan eksposur valas USD Rp. 1,035,687,000,000.00 adalah sebesar 18,974,513.88, sementara eksposur valas EUR Rp. 166,824,000,000.00 adalah sebesar -337,904.30, untuk eksposur valas JPY Rp 707,000,000.00 adalah sebesar 2,413.10 dan yang terakhir GBP eksposur valas sebesar Rp. 19,804,000,000.00 adalah sebesar 155,087,56 semuanya dalam jutaan.

3. Berdasarkan estimasi volatilitas EWMA, dengan confidence level 95% maka potensi kerugian maksimum PT Bank X pada tanggal 31 Desember 2007 dengan eksposur valas USD Rp. 1,035,687,000,000.00 adalah sebesar 4.762,963,468.41, sementara eksposur valas EUR Rp. 166,824,000,000.00 adalah sebesar 1.534.514.853,85, untuk eksposur valas JPY Rp 707,000,000.00 adalah sebesar 8.304.327,41 dan yang terakhir GBP eksposur valas sebesar Rp. 19,804,000,000.00 adalah sebesar 175.871.207,28 semuanya dalam jutaan

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LAMPIRAN

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LAMPIRAN I DATA RETURN UNTUK USD, EUR, JPY DAN GBP

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
1	12-Jan-04	8,330.55	-0.001416950	10,701.09	0.005888282	78.29	-0.001629994	15,386.62	0.006166599
2	13-Jan-04	8,320.48	-0.001209265	10,621.72	-0.007444606	78.12	-0.002213558	15,383.70	-0.000189845
3	14-Jan-04	8,328.61	0.000976477	10,605.02	-0.001573671	78.40	0.003634468	15,374.38	-0.000606381
4	15-Jan-04	8,352.29	0.002838640	10,567.36	-0.003556800	78.66	0.003356392	15,300.66	-0.004806077
5	16-Jan-04	8,369.23	0.002026057	10,527.09	-0.003818593	78.86	0.002532873	15,246.99	-0.003514274
6	19-Jan-04	8,362.80	-0.000768579	10,354.46	-0.016534538	78.54	-0.004099370	15,035.58	-0.013962570
7	20-Jan-04	8,418.48	0.006636588	10,416.53	0.005976740	78.32	-0.002781720	15,036.55	0.000064461
8	21-Jan-04	8,399.58	-0.002247291	10,605.22	0.017951906	78.42	0.001288806	15,304.14	0.017639742
9	22-Jan-04	8,400.16	0.000067964	10,647.54	0.003983047	78.60	0.002294209	15,420.23	0.007556637
10	23-Jan-04	8,399.59	-0.000067487	10,671.79	0.002274668	79.13	0.006674455	15,478.90	0.003797654
11	27-Jan-04	8,445.74	0.005479950	10,526.40	-0.013717154	79.51	0.004770547	15,309.78	-0.010986211
12	28-Jan-04	8,428.57	-0.002035350	10,614.26	0.008312135	79.59	0.001079461	15,380.46	0.004606301
13	29-Jan-04	8,441.59	0.001543635	10,516.88	-0.009217099	79.56	-0.000457369	15,352.51	-0.001818836
14	30-Jan-04	8,452.38	0.001277241	10,493.75	-0.002201971	79.78	0.002731482	15,354.09	0.000102665
15	02-Feb-04	8,459.62	0.000855986	10,534.75	0.003899823	80.09	0.003993396	15,433.64	0.005167613
16	03-Feb-04	8,452.13	-0.000885623	10,537.79	0.000288761	80.11	0.000158547	15,412.47	-0.001372412
17	04-Feb-04	8,437.46	-0.001737330	10,574.52	0.003479573	80.04	-0.000780012	15,489.30	0.004972560
18	05-Feb-04	8,458.61	0.002503309	10,599.37	0.002347260	80.14	0.001213593	15,488.45	-0.000054870
19	06-Feb-04	8,455.59	-0.000356351	10,616.78	0.001640452	79.75	-0.004897052	15,516.83	0.001830430
20	09-Feb-04	8,446.28	-0.001102442	10,761.65	0.013553898	79.98	0.002880449	15,654.25	0.008817418
21	10-Feb-04	8,418.69	-0.003271697	10,727.84	-0.003147297	79.73	-0.003195703	15,702.66	0.003087499
22	11-Feb-04	8,399.18	-0.002320053	10,671.45	-0.005270333	79.67	-0.000705612	15,713.94	0.000718440
23	12-Feb-04	8,400.46	0.000152183	10,777.51	0.009889506	79.75	0.001004478	15,894.23	0.011407799
24	13-Feb-04	8,418.06	0.002092967	10,785.81	0.000769896	79.87	0.001489826	15,925.84	0.001986580
25	16-Feb-04	8,396.61	-0.002551252	10,691.27	-0.008803896	79.62	-0.003070284	15,816.45	-0.006892358
26	17-Feb-04	8,397.63	0.000121637	10,722.79	0.002944616	79.41	-0.002667622	15,867.08	0.003196074
27	18-Feb-04	8,400.65	0.000359850	10,801.61	0.007323655	79.49	0.000988678	16,029.20	0.010165600
28	19-Feb-04	8,422.45	0.002590978	10,724.15	-0.007197351	78.99	-0.006364162	15,947.95	-0.005082019
29	20-Feb-04	8,424.86	0.000286208	10,716.24	-0.000737342	78.43	-0.007058867	15,964.91	0.001063256
30	23-Feb-04	8,439.64	0.001753456	10,553.31	-0.015321358	77.58	-0.010882401	15,676.52	-0.018229276
31	24-Feb-04	8,454.37	0.001743343	10,593.67	0.003817612	77.79	0.002653910	15,752.53	0.004837094
32	25-Feb-04	8,437.78	-0.001964060	10,695.26	0.009543313	78.01	0.002855486	15,945.75	0.012191160
33	26-Feb-04	8,446.51	0.001034535	10,566.34	-0.012126576	77.61	-0.005150197	15,857.21	-0.005567882
34	27-Feb-04	8,462.64	0.001906919	10,524.36	-0.003980938	77.26	-0.004513261	15,767.46	-0.005675829
35	01-Mar-04	8,448.03	-0.001727340	10,561.74	0.003545527	77.24	-0.000249487	15,804.35	0.002336483
36	02-Mar-04	8,471.40	0.002761833	10,536.06	-0.002434767	77.68	0.005632025	15,816.82	0.000788832
37	03-Mar-04	8,544.99	0.008650465	10,405.25	-0.012492902	77.53	-0.001839082	15,652.28	-0.010457324
38	04-Mar-04	8,540.45	-0.000532340	10,393.46	-0.001134062	77.51	-0.000241546	15,610.41	-0.002678682
39	05-Mar-04	8,589.69	0.005749569	10,477.58	0.008061385	77.15	-0.004676905	15,643.95	0.002146263
40	08-Mar-04	8,592.93	0.000376271	10,632.04	0.014634369	76.64	-0.006642279	15,870.31	0.014365719
41	09-Mar-04	8,536.46	-0.006593066	10,620.52	-0.001084287	76.76	0.001570559	15,850.75	-0.001232849
42	10-Mar-04	8,569.73	0.003889985	10,555.19	-0.006170052	77.01	0.003261113	15,659.42	-0.012144369
43	11-Mar-04	8,630.30	0.007043506	10,523.90	-0.002969599	78.10	0.013992389	15,523.26	-0.008733397
44	12-Mar-04	8,635.37	0.000586384	10,607.08	0.007873513	77.73	-0.004718334	15,500.25	-0.001483352
45	15-Mar-04	8,642.68	0.000846941	10,571.76	-0.003335470	77.91	0.002318845	15,570.83	0.004543518
46	16-Mar-04	8,616.80	-0.002998615	10,565.91	-0.000553499	78.22	0.003898385	15,539.78	-0.001996273
47	17-Mar-04	8,565.28	-0.005997983	10,513.79	-0.004944795	78.88	0.008449110	15,548.50	0.000560839
48	18-Mar-04	8,538.26	-0.003159686	10,479.41	-0.003276101	79.84	0.012126097	15,590.69	0.002709696
49	19-Mar-04	8,565.32	0.003165060	10,617.65	0.013105807	79.92	0.000981231	15,715.69	0.007985637
50	22-Mar-04	8,561.84	-0.000406951	10,485.12	-0.012561014	79.70	-0.002759418	15,681.26	-0.002193020
51	23-Mar-04	8,588.11	0.003063968	10,608.10	0.011660702	80.47	0.009583632	15,874.42	0.012242530
52	24-Mar-04	8,581.69	-0.000747593	10,572.04	-0.003405049	80.40	-0.000790668	15,867.16	-0.000457368
53	25-Mar-04	8,624.63	0.004990953	10,459.81	-0.010672467	81.32	0.011277250	15,738.47	-0.008143505
54	26-Mar-04	8,639.74	0.001750469	10,492.13	0.003085005	81.42	0.001225610	15,649.62	-0.005661292

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
55	29-Mar-04	8,605.37	-0.003986239	10,404.09	-0.008426112	81.51	0.001197505	15,590.95	-0.003755854
56	30-Mar-04	8,603.23	-0.000249149	10,489.11	0.008138883	81.45	-0.000760024	15,675.08	0.005381679
57	31-Mar-04	8,583.48	-0.002298207	10,501.37	0.001167913	82.37	0.011246097	15,734.30	0.003770503
58	01-Apr-04	8,573.12	-0.001207674	10,516.91	0.001478514	82.31	-0.000802085	15,771.55	0.002364847
59	02-Apr-04	8,603.56	0.003544367	10,631.77	0.010862048	82.58	0.003324508	15,955.38	0.011588413
60	05-Apr-04	8,579.73	-0.002773749	10,375.10	-0.024437634	81.89	-0.008334418	15,677.76	-0.017553016
61	06-Apr-04	8,579.59	-0.000015700	10,298.25	-0.007435130	80.51	-0.017040415	15,626.82	-0.003254901
62	07-Apr-04	8,584.61	0.000584533	10,359.41	0.005922193	81.16	0.008041043	15,772.40	0.009273037
63	08-Apr-04	8,588.57	0.000461842	10,489.09	0.012439652	81.33	0.002128441	15,849.78	0.004894438
64	13-Apr-04	8,575.15	-0.001563734	10,354.16	-0.012946699	81.59	0.003173207	15,785.94	-0.004036343
65	14-Apr-04	8,604.12	0.003372186	10,245.23	-0.010576310	80.22	-0.016955395	15,559.88	-0.014423479
66	15-Apr-04	8,629.02	0.002890052	10,303.08	0.005630435	79.45	-0.009623654	15,395.98	-0.010589595
67	16-Apr-04	8,627.05	-0.000227932	10,350.79	0.004620226	79.48	0.000359441	15,447.53	0.003342521
68	19-Apr-04	8,600.86	-0.003041419	10,349.27	-0.000147289	79.68	0.002471581	15,516.41	0.004449191
69	20-Apr-04	8,610.40	0.001108845	10,278.90	-0.006822772	79.50	-0.002218536	15,487.01	-0.001896835
70	21-Apr-04	8,637.48	0.003140623	10,228.41	-0.004923449	79.39	-0.001382345	15,411.28	-0.004901807
71	22-Apr-04	8,648.20	0.001240460	10,226.98	-0.000140414	79.12	-0.003462339	15,336.74	-0.004848412
72	23-Apr-04	8,630.55	-0.002043756	10,290.54	0.006195634	78.87	-0.003183764	15,332.53	-0.000274540
73	27-Apr-04	8,623.79	-0.000783169	10,214.65	-0.007401343	79.42	0.007009160	15,406.52	0.004814514
74	28-Apr-04	8,637.61	0.001600705	10,276.38	0.006024430	79.06	-0.004522154	15,469.90	0.004104973
75	29-Apr-04	8,659.98	0.002587021	10,237.12	-0.003827995	78.47	-0.007543524	15,316.58	-0.009960090
76	30-Apr-04	8,689.75	0.003431779	10,399.47	0.015734952	78.92	0.005724628	15,419.02	0.006666003
77	03-May-04	8,704.45	0.001689890	10,426.56	0.002601211	78.97	0.000645558	15,469.10	0.003242312
78	04-May-04	8,711.24	0.000780041	10,408.53	-0.001729914	79.00	0.000367680	15,450.53	-0.001201077
79	05-May-04	8,710.87	-0.000042731	10,554.91	0.013965184	79.54	0.006842375	15,644.49	0.012475488
80	06-May-04	8,696.48	-0.001652558	10,580.80	0.002449325	79.66	0.001552351	15,598.63	-0.002935816
81	07-May-04	8,729.81	0.003824142	10,520.31	-0.005733047	79.04	-0.007845857	15,623.13	0.001569707
82	10-May-04	8,835.08	0.011986748	10,466.81	-0.005097903	78.26	-0.009954952	15,741.64	0.007556820
83	11-May-04	8,970.27	0.015186153	10,642.36	0.016632430	79.06	0.010229162	15,925.55	0.011615256
84	12-May-04	8,943.31	-0.003010168	10,618.85	-0.002211004	79.43	0.004618584	15,748.05	-0.011207994
85	13-May-04	9,008.10	0.007218090	10,700.79	0.007686494	79.05	-0.004775550	15,905.03	0.009918741
86	14-May-04	9,055.10	0.005203749	10,710.11	0.000870579	79.06	0.000093281	15,939.10	0.002139794
87	17-May-04	8,992.36	-0.006952300	10,757.03	0.004371063	79.04	-0.000204784	15,880.86	-0.003660844
88	18-May-04	9,078.14	0.009493878	10,882.30	0.011578518	79.63	0.007414994	16,018.59	0.008635617
89	19-May-04	9,057.88	-0.002234380	10,857.29	-0.002300959	79.93	0.003712234	16,040.18	0.001347081
90	20-May-04	9,049.68	-0.000905157	10,814.64	-0.003936395	79.63	-0.003730055	16,058.43	0.001137025
91	21-May-04	9,074.15	0.002700444	10,893.65	0.007279987	80.80	0.014618471	16,156.19	0.006069484
92	24-May-04	9,086.47	0.001356336	10,871.28	-0.002055581	80.72	-0.001013658	16,233.00	0.004742664
93	25-May-04	9,308.57	0.024149206	11,207.43	0.030452189	82.36	0.020068080	16,724.85	0.029849206
94	26-May-04	9,290.35	-0.001959420	11,250.64	0.003848096	83.21	0.010280896	16,841.43	0.006946656
95	27-May-04	9,310.20	0.002134304	11,314.67	0.005674701	83.59	0.004590424	16,974.90	0.007893583
96	28-May-04	9,289.19	-0.002258964	11,421.24	0.009375146	84.08	0.005901993	17,096.77	0.007154165
97	31-May-04	9,263.61	-0.002757223	11,311.11	-0.009689399	84.59	0.006048410	17,010.28	-0.005071772
98	01-Jun-04	9,364.53	0.010834297	11,443.93	0.011674142	85.45	0.010020405	17,205.54	0.011413553
99	02-Jun-04	9,575.28	0.022256011	11,756.76	0.026968449	86.61	0.013538567	17,662.68	0.026222112
100	03-Jun-04	9,461.37	-0.011967252	11,537.24	-0.018847840	85.50	-0.012893996	17,333.33	-0.018822265
101	04-Jun-04	9,467.36	0.000632855	11,558.58	0.001847675	85.36	-0.001680288	17,405.53	0.004156821
102	07-Jun-04	9,338.95	-0.013656505	11,511.79	-0.004056085	84.75	-0.007151711	17,240.38	-0.009533971
103	08-Jun-04	9,289.77	-0.005279649	11,455.60	-0.004893487	84.70	-0.000541520	17,106.98	-0.007767477
104	09-Jun-04	9,279.77	-0.001077278	11,357.33	-0.008614944	85.09	0.004593848	17,034.50	-0.004246050
105	10-Jun-04	9,380.25	0.010769505	11,313.31	-0.003883731	85.47	0.004443432	17,155.72	0.007090912
106	11-Jun-04	9,380.31	0.000006941	11,265.14	-0.004266382	85.17	-0.003504070	17,178.68	0.001337130
107	15-Jun-04	9,398.28	0.001913078	11,343.20	0.006905530	84.86	-0.003683544	17,046.36	-0.007732244
108	16-Jun-04	9,393.46	-0.000512721	11,410.57	0.005921309	85.81	0.011146380	17,216.79	0.009948769
109	17-Jun-04	9,403.42	0.001060005	11,302.28	-0.009535273	85.72	-0.001028926	17,199.79	-0.000988376
110	18-Jun-04	9,407.54	0.000437639	11,274.17	-0.002491049	85.93	0.002453172	17,203.00	0.000187046

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		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
111	21-Jun-04	9,389.80	-0.001887162	11,394.57	0.010623067	86.60	0.007722561	17,262.29	0.003440151
112	22-Jun-04	9,412.88	0.002454740	11,395.06	0.000043170	86.68	0.000897175	17,210.97	-0.002976881
113	23-Jun-04	9,424.64	0.001248455	11,463.07	0.005950544	86.75	0.000860760	17,208.26	-0.000157982
114	24-Jun-04	9,432.84	0.000869944	11,380.82	-0.007201225	87.14	0.004412067	17,122.17	-0.005015188
115	25-Jun-04	9,423.10	-0.001032647	11,464.56	0.007331028	87.81	0.007710968	17,189.37	0.003917210
116	28-Jun-04	9,411.26	-0.001257965	11,428.07	-0.003187534	87.28	-0.006043850	17,148.09	-0.002404502
117	29-Jun-04	9,425.30	0.001491344	11,464.09	0.003146928	86.89	-0.004532821	17,218.59	0.004103103
118	30-Jun-04	9,412.11	-0.001401205	11,371.45	-0.008114114	86.66	-0.002602960	16,996.07	-0.013007868
119	01-Jul-04	9,385.19	-0.002864133	11,427.58	0.004923728	86.86	0.002288419	17,058.21	0.003649701
120	02-Jul-04	9,258.31	-0.013610883	11,265.56	-0.014279136	84.91	-0.022703188	16,828.51	-0.013557119
121	05-Jul-04	9,129.52	-0.014008559	11,246.76	-0.001670015	83.95	-0.011347088	16,730.03	-0.005869410
122	06-Jul-04	8,969.89	-0.017639631	11,049.11	-0.017730661	81.94	-0.024219394	16,445.18	-0.017172613
123	07-Jul-04	9,024.49	0.006068667	11,154.11	0.009458485	82.98	0.012590637	16,670.95	0.013635162
124	08-Jul-04	9,006.51	-0.001994306	11,143.49	-0.000952287	82.84	-0.001648525	16,700.92	0.001796352
125	09-Jul-04	8,979.96	-0.002952651	11,147.91	0.000395914	83.08	0.002857648	16,654.70	-0.002771411
126	12-Jul-04	8,807.62	-0.019378236	10,918.73	-0.020771711	81.62	-0.017731119	16,372.50	-0.017089675
127	13-Jul-04	8,910.19	0.011579043	11,014.67	0.008747610	82.02	0.004856464	16,527.64	0.009430846
128	14-Jul-04	8,969.13	0.006592498	11,068.03	0.004832885	82.21	0.002364839	16,648.76	0.007301830
129	15-Jul-04	9,000.00	0.003436008	11,132.75	0.005830913	82.38	0.001986747	16,673.49	0.001484354
130	16-Jul-04	8,909.47	-0.010110061	11,018.80	-0.010288218	81.35	-0.012569254	16,507.04	-0.010032956
131	19-Jul-04	8,887.38	-0.002482704	11,066.64	0.004332329	82.15	0.009813617	16,660.71	0.009266143
132	20-Jul-04	8,962.64	0.008432854	11,154.83	0.007936938	82.51	0.004399725	16,723.70	0.003773498
133	21-Jul-04	8,982.23	0.002183944	11,067.37	-0.007871518	82.66	0.001807946	16,633.51	-0.005407288
134	22-Jul-04	9,090.27	0.011956214	11,140.70	0.006603878	82.80	0.001688970	16,726.85	0.005595805
135	23-Jul-04	9,018.37	-0.007941161	11,036.55	-0.009391990	82.15	-0.007850915	16,617.57	-0.006554619
136	26-Jul-04	9,088.48	0.007744361	11,029.49	-0.000640533	82.87	0.008630744	16,695.05	0.004651422
137	27-Jul-04	9,124.51	0.003955973	11,070.76	0.003734965	83.03	0.001986378	16,808.18	0.006753628
138	28-Jul-04	9,120.58	-0.000430431	11,006.19	-0.005849265	82.21	-0.009968736	16,633.74	-0.010432485
139	29-Jul-04	9,159.99	0.004311363	11,051.45	0.004103647	82.03	-0.002125430	16,704.07	0.004219264
140	30-Jul-04	9,182.65	0.002471016	11,056.53	0.000459739	82.01	-0.000247231	16,671.00	-0.001981903
141	03-Aug-04	9,164.41	-0.001988555	11,008.91	-0.004316718	82.66	0.007895687	16,723.91	0.003169090
142	04-Aug-04	9,232.74	0.007428496	11,104.26	0.008624399	83.06	0.004774685	16,824.90	0.006020446
143	05-Aug-04	9,185.58	-0.005120526	11,074.24	-0.002707504	82.72	-0.004026461	16,776.37	-0.002888928
144	06-Aug-04	9,202.90	0.001883134	11,119.31	0.004061952	82.44	-0.003490046	16,801.56	0.001500360
145	09-Aug-04	9,164.92	-0.004135222	11,253.43	0.011989380	83.19	0.009125845	16,884.49	0.004923730
146	10-Aug-04	9,198.60	0.003668178	11,285.18	0.002817005	83.19	-0.000021682	16,929.21	0.002645567
147	11-Aug-04	9,229.80	0.003385710	11,298.30	0.001162339	82.99	-0.002348645	16,882.22	-0.002779999
148	12-Aug-04	9,260.61	0.003332518	11,333.33	0.003095978	83.69	0.008313412	16,960.76	0.004641567
149	13-Aug-04	9,288.54	0.003012041	11,351.77	0.001625604	83.04	-0.007739315	16,899.13	-0.003640542
150	16-Aug-04	9,270.06	-0.001991566	11,453.70	0.008938887	83.76	0.008577885	17,065.78	0.009813202
151	17-Aug-04	9,284.92	0.001601350	11,475.24	0.001879006	84.09	0.003923923	17,095.29	0.001727753
152	18-Aug-04	9,285.12	0.000021172	11,469.47	-0.000502816	84.42	0.003985724	16,981.61	-0.006671582
153	19-Aug-04	9,272.32	-0.001379039	11,439.92	-0.002580175	84.67	0.002880046	16,911.69	-0.004126146
154	20-Aug-04	9,278.62	0.000679266	11,483.44	0.003797382	85.07	0.004704594	17,004.55	0.005475881
155	23-Aug-04	9,255.36	-0.002509701	11,387.94	-0.008350979	84.77	-0.003431648	16,831.11	-0.010251999
156	24-Aug-04	9,257.54	0.000235569	11,252.13	-0.011997489	84.27	-0.005938616	16,745.37	-0.005107346
157	25-Aug-04	9,279.45	0.002362975	11,208.96	-0.003844168	84.73	0.005459249	16,645.51	-0.005981384
158	26-Aug-04	9,297.77	0.001973134	11,209.17	0.000018446	84.47	-0.003121269	16,676.84	0.001880987
159	27-Aug-04	9,293.70	-0.000437985	11,268.23	0.005255690	85.12	0.007645869	16,737.19	0.003612027
160	30-Aug-04	9,308.17	0.001555299	11,175.25	-0.008285738	84.39	-0.008646519	16,636.74	-0.006019935
161	31-Aug-04	9,333.90	0.002761153	11,271.10	0.008539941	85.15	0.009056782	16,779.49	0.008543829
162	01-Sep-04	9,372.78	0.004156689	11,417.46	0.012901844	85.78	0.007328387	16,883.95	0.006206140
163	02-Sep-04	9,322.95	-0.005330520	11,353.28	-0.005637084	85.14	-0.007454156	16,710.19	-0.010344599
164	03-Sep-04	9,280.29	-0.004587072	11,292.74	-0.005346323	84.67	-0.005564613	16,610.21	-0.006000934
165	06-Sep-04	9,290.05	0.001051711	11,197.28	-0.008489256	84.23	-0.005216897	16,495.51	-0.006929702
166	07-Sep-04	9,282.21	-0.000844071	11,209.75	0.001112716	84.55	0.003775006	16,559.53	0.003873533

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		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
167	08-Sep-04	9,259.53	-0.002447052	11,177.19	-0.002908553	84.48	-0.000811831	16,409.86	-0.009079124
168	09-Sep-04	9,379.96	0.012922118	11,422.30	0.021692439	85.68	0.014141933	16,748.20	0.020408200
169	10-Sep-04	9,295.67	-0.009026195	11,371.47	-0.004460093	84.43	-0.014666940	16,630.29	-0.007064708
170	13-Sep-04	9,276.49	-0.002066168	11,376.76	0.000465213	84.69	0.003041911	16,663.23	0.001978457
171	14-Sep-04	9,161.66	-0.012455457	11,235.09	-0.012531014	83.37	-0.015677974	16,475.43	-0.011334167
172	15-Sep-04	9,085.71	-0.008324910	11,116.95	-0.010571032	82.79	-0.007034851	16,286.23	-0.011550440
173	16-Sep-04	9,093.26	0.000831526	11,051.25	-0.005927078	82.70	-0.001133098	16,170.98	-0.007101817
174	17-Sep-04	9,026.62	-0.007355439	11,001.40	-0.004521459	82.35	-0.004254391	16,189.99	0.001174995
175	20-Sep-04	9,041.62	0.001660401	11,002.61	0.000110461	82.19	-0.001924099	16,186.94	-0.000188242
176	21-Sep-04	8,985.86	-0.006186771	10,940.87	-0.005627326	81.63	-0.006835576	16,044.38	-0.008846323
177	22-Sep-04	9,110.39	0.013762936	11,219.64	0.025160540	82.97	0.016310355	16,367.58	0.019943884
178	23-Sep-04	9,155.13	0.004899148	11,232.45	0.001141030	82.61	-0.004329786	16,425.86	0.003554354
179	24-Sep-04	9,109.27	-0.005021427	11,184.98	-0.004234947	82.34	-0.003308763	16,365.93	-0.003655072
180	27-Sep-04	9,187.52	0.008552982	11,278.69	0.008343073	83.03	0.008350359	16,593.04	0.013781989
181	28-Sep-04	9,206.44	0.002057252	11,314.07	0.003132065	82.72	-0.003705919	16,657.38	0.003869892
182	29-Sep-04	9,197.49	-0.000972649	11,338.61	0.002166657	82.82	0.001194026	16,662.45	0.000304382
183	30-Sep-04	9,175.88	-0.002352297	11,318.61	-0.001765824	82.86	0.000424681	16,527.22	-0.008149258
184	01-Oct-04	9,143.84	-0.003497619	11,359.44	0.003601167	83.05	0.002321150	16,553.70	0.001601088
185	04-Oct-04	9,143.84	0.000000000	11,359.44	0.000000000	83.05	0.000000000	16,553.70	0.000000000
186	05-Oct-04	9,074.15	-0.007650634	11,141.93	-0.019333275	81.85	-0.014556739	16,201.44	-0.021509834
187	06-Oct-04	9,093.29	0.002107262	11,203.88	0.005544105	81.84	-0.000085111	16,225.07	0.001457600
188	07-Oct-04	9,101.57	0.000910194	11,195.04	-0.000788753	81.98	0.001655721	16,215.88	-0.000566184
189	08-Oct-04	9,084.91	-0.001832113	11,193.50	-0.000137932	82.15	0.002077314	16,201.91	-0.000862036
190	11-Oct-04	9,070.59	-0.001577703	11,250.85	0.005110067	82.89	0.008995856	16,281.80	0.004918727
191	12-Oct-04	9,118.25	0.005240448	11,266.89	0.001425252	83.06	0.002101156	16,356.06	0.004550337
192	13-Oct-04	9,132.34	0.001544574	11,240.28	-0.002364404	83.11	0.000540813	16,352.02	-0.000247105
193	14-Oct-04	9,134.81	0.000270380	11,281.53	0.003662502	83.29	0.002198901	16,398.32	0.002827445
194	15-Oct-04	9,108.59	-0.002875441	11,289.88	0.000740553	83.15	-0.001699026	16,372.14	-0.001597584
195	18-Oct-04	9,100.11	-0.000930995	11,358.83	0.006087866	83.33	0.002177376	16,401.28	0.001778449
196	19-Oct-04	9,118.38	0.002005444	11,371.30	0.001097682	83.34	0.000125925	16,383.24	-0.001100476
197	20-Oct-04	9,076.29	-0.004626510	11,345.36	-0.002283781	83.55	0.002502336	16,352.15	-0.001899346
198	21-Oct-04	9,105.47	0.003209998	11,458.83	0.009951826	84.50	0.011357833	16,546.62	0.011822225
199	22-Oct-04	9,094.37	-0.001220352	11,465.25	0.000560115	84.44	-0.000735726	16,624.47	0.004693972
200	25-Oct-04	9,078.58	-0.001737640	11,579.58	0.009922213	84.99	0.006421970	16,680.65	0.003373596
201	26-Oct-04	9,078.38	-0.000021156	11,623.57	0.003791485	85.01	0.000243745	16,716.75	0.002161680
202	27-Oct-04	9,102.50	0.002652364	11,606.23	-0.001492842	85.19	0.002087871	16,724.18	0.000444465
203	28-Oct-04	9,089.09	-0.001474039	11,559.37	-0.004045521	85.60	0.004828358	16,662.59	-0.003689773
204	29-Oct-04	9,088.59	-0.000054323	11,577.60	0.001575951	85.60	-0.000004823	16,628.25	-0.002062824
205	01-Nov-04	9,086.04	-0.000280714	11,610.81	0.002864163	85.52	-0.000943218	16,670.76	0.002553201
206	02-Nov-04	9,092.50	0.000709908	11,585.70	-0.002164766	85.42	-0.001120470	16,674.05	0.000197544
207	03-Nov-04	9,112.48	0.002195656	11,563.46	-0.001921683	85.63	0.002402788	16,720.79	0.002798938
208	04-Nov-04	9,107.62	-0.000534196	11,680.23	0.010047856	85.73	0.001174506	16,827.06	0.006335854
209	05-Nov-04	9,059.69	-0.005275577	11,674.61	-0.000481443	85.41	-0.003720611	16,715.40	-0.006658116
210	08-Nov-04	9,004.60	-0.006099495	11,684.01	0.000805218	85.44	0.000367974	16,702.44	-0.000775669
211	09-Nov-04	9,004.63	0.000002702	11,630.53	-0.004588166	85.27	-0.002021685	16,691.99	-0.000625959
212	10-Nov-04	9,042.36	0.004181392	11,662.71	0.002763058	85.44	0.002075231	16,778.13	0.005147473
213	11-Nov-04	9,079.66	0.004116589	11,692.10	0.002516929	84.86	-0.006822662	16,758.20	-0.001188481
214	12-Nov-04	9,058.58	-0.002324402	11,700.73	0.000737595	85.44	0.006723880	16,738.34	-0.001185741
215	15-Nov-04	9,044.83	-0.001518288	11,732.97	0.002752232	85.89	0.005348496	16,799.42	0.003642353
216	16-Nov-04	9,044.65	-0.000020142	11,703.06	-0.002553073	85.79	-0.001193301	16,701.82	-0.005826609
217	17-Nov-04	9,044.73	0.000008163	11,726.16	0.001972220	85.79	-0.000024177	16,767.31	0.003913582
218	18-Nov-04	9,045.55	0.000090838	11,791.19	0.005530702	86.99	0.013940995	16,817.32	0.002977743
219	19-Nov-04	9,044.49	-0.000117210	11,719.30	-0.006116087	86.81	-0.002152349	16,751.85	-0.003900362
220	22-Nov-04	8,989.77	-0.006068204	11,718.62	-0.000057896	86.98	0.002031060	16,690.41	-0.003674553
221	23-Nov-04	9,021.95	0.003573076	11,722.82	0.000357951	87.22	0.002707630	16,727.75	0.002234734
222	24-Nov-04	8,993.38	-0.003171286	11,772.45	0.004224849	86.82	-0.004609087	16,802.19	0.004440139

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
223	25-Nov-04	8,964.16	-0.003254783	11,814.07	0.003529413	87.14	0.003684130	16,873.21	0.004217827
224	26-Nov-04	8,961.82	-0.000260432	11,908.59	0.007968651	87.56	0.004771440	17,000.48	0.007514557
225	29-Nov-04	8,997.08	0.003925861	11,931.89	0.001955176	87.48	-0.000862403	17,014.42	0.000819939
226	30-Nov-04	9,017.36	0.002252300	11,968.25	0.003042138	87.48	0.000051283	17,045.95	0.001851347
227	01-Dec-04	9,015.06	-0.000255053	11,995.89	0.002306760	87.73	0.002841774	17,229.33	0.010700457
228	02-Dec-04	9,021.14	0.000673818	12,054.44	0.004869334	88.26	0.005930346	17,445.49	0.012467991
229	03-Dec-04	9,052.41	0.003460734	12,025.38	-0.002413736	87.54	-0.008130246	17,403.82	-0.002391342
230	06-Dec-04	9,046.95	-0.000603910	12,165.84	0.011612082	88.57	0.011646338	17,570.19	0.009513654
231	07-Dec-04	9,073.60	0.002941257	12,177.52	0.000959740	88.22	-0.003958539	17,616.79	0.002648770
232	08-Dec-04	9,139.69	0.007257279	12,209.63	0.002633352	88.39	0.001915531	17,710.60	0.005311027
233	09-Dec-04	9,173.04	0.003642796	12,210.32	0.000057023	88.06	-0.003684273	17,697.20	-0.000756812
234	10-Dec-04	9,198.62	0.002784088	12,165.49	-0.003678246	87.30	-0.008641318	17,596.13	-0.005727537
235	13-Dec-04	9,236.59	0.004119840	12,265.51	0.008188153	88.09	0.008928840	17,720.33	0.007033389
236	14-Dec-04	9,299.72	0.006811847	12,360.04	0.007677198	88.62	0.006078830	17,863.46	0.008045164
237	15-Dec-04	9,348.57	0.005239028	12,436.28	0.006149202	88.79	0.001916309	18,007.13	0.008010088
238	16-Dec-04	9,239.71	-0.011712923	12,389.21	-0.003792117	88.59	-0.002288744	17,929.02	-0.004346739
239	17-Dec-04	9,318.45	0.008485570	12,360.22	-0.002343007	89.18	0.006634022	18,023.88	0.005276469
240	20-Dec-04	9,320.15	0.000182019	12,417.10	0.004591867	89.23	0.000539782	18,081.32	0.003182117
241	21-Dec-04	9,320.20	0.000005538	12,479.04	0.004975294	89.68	0.005056930	18,129.44	0.002657783
242	22-Dec-04	9,327.83	0.000818516	12,454.51	-0.001966988	89.36	-0.003616657	17,981.81	-0.008176335
243	23-Dec-04	9,317.14	-0.001146364	12,512.71	0.004662037	89.65	0.003264140	17,862.33	-0.006666982
244	24-Dec-04	9,265.34	-0.005575718	12,507.47	-0.000418816	89.36	-0.003228300	17,800.30	-0.003478581
245	29-Dec-04	9,327.52	0.006688334	12,692.98	0.014722716	90.21	0.009444776	18,012.39	0.011844614
246	30-Dec-04	9,367.99	0.004329517	12,771.23	0.006146154	90.37	0.001797216	18,008.93	-0.000192398
247	31-Dec-04	9,309.37	-0.006276668	12,684.97	-0.006776998	90.66	0.003223672	17,937.18	-0.003992148
248	04-Jan-05	9,279.66	-0.003196508	12,514.29	-0.013547345	90.39	-0.002953093	17,695.89	-0.013543190
249	05-Jan-05	9,308.32	0.003083166	12,348.66	-0.013323643	89.13	-0.014055620	17,530.16	-0.009409095
250	06-Jan-05	9,278.51	-0.003206940	12,304.22	-0.003604954	89.00	-0.001511264	17,479.03	-0.002921059
251	07-Jan-05	9,290.49	0.001290247	12,260.30	-0.003576040	88.77	-0.002540473	17,452.57	-0.001514876
252	10-Jan-05	9,298.43	0.000854154	12,163.19	-0.007952209	88.87	0.001111820	17,418.48	-0.001955563
253	11-Jan-05	9,282.24	-0.001742742	12,188.85	0.002107484	89.29	0.004699651	17,460.44	0.002405865
254	12-Jan-05	9,257.07	-0.002715564	12,137.93	-0.004186140	89.49	0.002219596	17,378.43	-0.004707977
255	13-Jan-05	9,151.88	-0.011428133	12,128.65	-0.000764680	89.34	-0.001664135	17,297.16	-0.004686942
256	14-Jan-05	9,170.07	0.001985696	12,026.61	-0.008449239	89.08	-0.002861094	17,166.46	-0.007585010
257	17-Jan-05	9,145.64	-0.002668056	11,992.42	-0.002846942	89.53	0.004958400	17,125.28	-0.002401995
258	18-Jan-05	9,155.15	0.001040165	11,932.13	-0.005039474	89.37	-0.001780784	17,013.08	-0.006572905
259	19-Jan-05	9,154.56	-0.000065171	11,925.66	-0.000542777	89.35	-0.000190686	17,090.01	0.004511571
260	20-Jan-05	9,156.48	0.000210427	11,910.78	-0.001247984	89.23	-0.001326297	17,148.13	0.003394907
261	21-Jan-05	9,160.73	0.000463432	11,866.67	-0.003710899	88.58	-0.007332969	17,132.28	-0.000924701
262	24-Jan-05	9,151.51	-0.001007102	11,939.31	0.006103115	88.95	0.004161758	17,169.67	0.002180225
263	25-Jan-05	9,131.39	-0.002200180	11,890.11	-0.004129511	88.82	-0.001420858	17,149.48	-0.001177045
264	26-Jan-05	9,131.39	0.000000000	11,890.11	0.000000000	88.82	0.000000000	17,149.48	0.000000000
265	27-Jan-05	9,139.51	0.000888131	11,950.48	0.005064495	88.57	-0.002899995	17,204.17	0.003184234
266	28-Jan-05	9,144.85	0.000584022	11,911.96	-0.003228312	88.58	0.000169210	17,246.41	0.002452288
267	31-Jan-05	9,160.64	0.001725531	11,932.72	0.001740783	88.49	-0.001058855	17,260.34	0.000807295
268	01-Feb-05	9,183.15	0.002453740	11,983.47	0.004244371	88.55	0.000676642	17,316.60	0.003254020
269	02-Feb-05	9,222.62	0.004289753	12,062.15	0.006544299	88.91	0.004073081	17,368.68	0.003002973
270	03-Feb-05	9,208.05	-0.001581654	11,988.25	-0.006145988	88.35	-0.006253954	17,340.30	-0.001635353
271	04-Feb-05	9,207.48	-0.000061368	11,941.03	-0.003946416	88.16	-0.002223416	17,323.39	-0.000975287
272	07-Feb-05	9,207.66	0.000019656	11,810.03	-0.011031024	88.30	0.001657213	17,241.21	-0.004755202
273	08-Feb-05	9,275.00	0.007286733	11,835.27	0.002135279	88.22	-0.000976236	17,214.42	-0.001554934
274	09-Feb-05	9,282.35	0.000791440	11,840.96	0.000480457	87.83	-0.004388669	17,212.24	-0.000126940
275	10-Feb-05	9,281.58	-0.000083051	11,894.08	0.004475639	87.91	0.000946360	17,275.34	0.003659439
276	11-Feb-05	9,279.87	-0.000184137	11,950.26	0.004712108	87.68	-0.002623273	17,335.72	0.003489139
277	14-Feb-05	9,244.68	-0.003798722	11,957.17	0.000578154	88.15	0.005259567	17,351.18	0.000891434
278	15-Feb-05	9,259.50	0.001601053	11,998.35	0.003438216	87.92	-0.002551806	17,455.55	0.005996953

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
279	16-Feb-05	9,268.82	0.001006530	12,069.88	0.005944007	88.37	0.005115036	17,551.17	0.005462829
280	17-Feb-05	9,295.45	0.002869138	12,125.64	0.004609529	88.30	-0.000857081	17,530.03	-0.001204873
281	18-Feb-05	9,288.90	-0.000705048	12,140.24	0.001202992	88.07	-0.002531933	17,585.04	0.003133049
282	21-Feb-05	9,273.84	-0.001623145	12,102.39	-0.003122944	87.67	-0.004551081	17,555.88	-0.001659959
283	22-Feb-05	9,256.17	-0.001906987	12,168.63	0.005459112	88.28	0.006936201	17,627.08	0.004047524
284	23-Feb-05	9,244.45	-0.001266653	12,239.48	0.005804999	88.31	0.000312333	17,634.74	0.000434869
285	24-Feb-05	9,262.69	0.001971165	12,261.04	0.001760444	88.42	0.001214220	17,685.97	0.002900594
286	25-Feb-05	9,263.88	0.000128622	12,233.43	-0.002254436	87.95	-0.005367349	17,698.30	0.000696716
287	28-Feb-05	9,265.02	0.000123086	12,286.53	0.004330753	88.46	0.005883513	17,802.63	0.005877518
288	01-Mar-05	9,252.76	-0.001323930	12,208.25	-0.006391556	88.53	0.000777068	17,754.21	-0.002723467
289	02-Mar-05	9,283.52	0.003318995	12,222.97	0.001205021	88.74	0.002371233	17,803.09	0.002749349
290	03-Mar-05	9,284.98	0.000157090	12,195.90	-0.002217059	88.52	-0.002474816	17,761.19	-0.002355844
291	04-Mar-05	9,339.38	0.005841631	12,238.78	0.003509805	88.63	0.001149044	17,800.78	0.002226273
292	07-Mar-05	9,337.72	-0.000177582	12,355.90	0.009523851	89.12	0.005585264	17,950.34	0.008366861
293	08-Mar-05	9,350.40	0.001357059	12,365.30	0.000760990	88.98	-0.001590513	17,910.12	-0.002243005
294	09-Mar-05	9,377.74	0.002919745	12,514.65	0.012005378	89.67	0.007728916	18,086.14	0.009779581
295	10-Mar-05	9,360.55	-0.001834912	12,573.41	0.004683997	89.97	0.003283132	18,049.90	-0.002005360
296	11-Mar-05	9,364.48	0.000419092	12,573.52	0.000008874	89.93	-0.000367550	18,015.10	-0.001930029
297	14-Mar-05	9,390.84	0.002811708	12,633.19	0.004734414	89.95	0.000179366	18,072.82	0.003198618
298	15-Mar-05	9,367.87	-0.002448932	12,523.29	-0.008737445	89.41	-0.006026907	17,949.03	-0.006872879
299	16-Mar-05	9,358.31	-0.001021592	12,460.40	-0.005034308	89.62	0.002406985	17,911.82	-0.002075100
300	17-Mar-05	9,360.33	0.000216256	12,542.69	0.006582441	89.73	0.001195975	18,002.91	0.005072593
301	18-Mar-05	9,374.45	0.001506839	12,534.57	-0.000647447	89.49	-0.002700235	18,019.39	0.000915101
302	21-Mar-05	9,384.71	0.001094329	12,442.21	-0.007395617	89.44	-0.000552500	17,959.38	-0.003336020
303	22-Mar-05	9,408.47	0.002527780	12,384.63	-0.004638759	89.47	0.000282757	17,847.64	-0.006241196
304	23-Mar-05	9,387.34	-0.002248215	12,282.41	-0.008288040	89.11	-0.003973578	17,707.93	-0.007858821
305	24-Mar-05	9,418.15	0.003277453	12,235.85	-0.003798049	88.69	-0.004746183	17,632.53	-0.004266836
306	25-Mar-05	9,418.15	0.000000000	12,235.85	0.000000000	88.69	0.000000000	17,632.53	0.000000000
307	28-Mar-05	9,418.15	0.000000000	12,235.85	0.000000000	88.69	0.000000000	17,632.53	0.000000000
308	29-Mar-05	9,495.26	0.008154091	12,270.29	0.002810802	88.56	-0.001412548	17,736.31	0.005867998
309	30-Mar-05	9,529.29	0.003577066	12,347.52	0.006274479	88.88	0.003562074	17,912.01	0.009857569
310	31-Mar-05	9,489.57	-0.004176793	12,263.52	-0.006826308	88.58	-0.003331850	17,835.40	-0.004285901
311	01-Apr-05	9,485.12	-0.000468866	12,297.89	0.002798494	88.23	-0.003990851	17,900.39	0.003637122
312	04-Apr-05	9,480.92	-0.000442785	12,227.62	-0.005730504	88.02	-0.002348308	17,815.17	-0.004772360
313	05-Apr-05	9,495.56	0.001542200	12,170.85	-0.004652824	87.35	-0.007656321	17,804.46	-0.000601205
314	06-Apr-05	9,476.09	-0.002052093	12,204.27	0.002742114	87.80	0.005085438	17,833.78	0.001645672
315	07-Apr-05	9,486.15	0.001060477	12,251.34	0.003849439	87.47	-0.003795113	17,868.17	0.001926251
316	08-Apr-05	9,496.41	0.001081711	12,176.31	-0.006143133	87.38	-0.000944383	17,749.33	-0.006673157
317	11-Apr-05	9,502.66	0.000657173	12,281.55	0.008605894	87.64	0.002907201	17,895.12	0.008180422
318	12-Apr-05	9,487.81	-0.001563635	12,310.01	0.002314343	88.11	0.005424766	17,940.96	0.002558275
319	13-Apr-05	9,493.38	0.000586885	12,266.16	-0.003568736	88.40	0.003217028	17,967.88	0.001499029
320	14-Apr-05	9,494.70	0.000139410	12,226.66	-0.003225206	88.01	-0.004408952	17,928.26	-0.002207353
321	15-Apr-05	9,543.50	0.005126193	12,211.28	-0.001258560	88.05	0.000470722	17,920.65	-0.000424621
322	18-Apr-05	9,569.77	0.002748649	12,336.48	0.010200481	88.75	0.007868033	18,087.00	0.009239932
323	19-Apr-05	9,576.55	0.000708367	12,472.42	0.010959465	89.25	0.005698117	18,233.69	0.008077501
324	20-Apr-05	9,596.59	0.002090350	12,547.76	0.006021958	89.79	0.005990897	18,403.17	0.009252218
325	21-Apr-05	9,615.88	0.002008476	12,599.22	0.004092995	90.00	0.002328233	18,469.92	0.003620231
326	22-Apr-05	9,674.68	0.006096407	12,622.04	0.001809599	90.65	0.007216317	18,468.34	-0.000085684
327	26-Apr-05	9,755.38	0.008306491	12,690.77	0.005430185	92.23	0.017236680	18,655.40	0.010077985
328	27-Apr-05	9,580.97	-0.018040040	12,395.33	-0.023555194	90.19	-0.022297615	18,235.58	-0.022760887
329	28-Apr-05	9,556.10	-0.002599225	12,357.74	-0.003037391	90.28	0.000919119	18,207.89	-0.001519544
330	29-Apr-05	9,574.96	0.001971619	12,390.66	0.002660292	90.84	0.006248044	18,326.39	0.006486888
331	02-May-05	9,541.14	-0.003537869	12,265.61	-0.010143060	90.63	-0.002380302	18,178.27	-0.008115415
332	03-May-05	9,560.96	0.002075139	12,272.35	0.000549316	90.90	0.003072530	18,103.36	-0.004128925
333	04-May-05	9,525.40	-0.003726342	12,341.28	0.005600552	90.98	0.000859449	18,098.73	-0.000256062
334	05-May-05	9,512.38	-0.001367704	12,324.19	-0.001385494	91.16	0.001928017	18,115.84	0.000944733

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		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
335	06-May-05	9,476.39	-0.003791390	12,261.71	-0.005082799	90.56	-0.006621427	18,018.55	-0.005384920
336	09-May-05	9,500.78	0.002570455	12,166.28	-0.007812951	90.27	-0.003195395	17,930.19	-0.004915499
337	10-May-05	9,488.11	-0.001334302	12,184.59	0.001504236	89.80	-0.005231040	17,858.88	-0.003985135
338	11-May-05	9,455.98	-0.003392334	12,168.21	-0.001345221	89.47	-0.003613268	17,794.76	-0.003596885
339	12-May-05	9,476.00	0.002115389	12,117.80	-0.004151548	89.30	-0.001988590	17,725.07	-0.003923854
340	13-May-05	9,475.61	-0.000040960	12,008.62	-0.009051131	88.67	-0.007042684	17,664.55	-0.003420143
341	16-May-05	9,490.61	0.001581194	11,962.98	-0.003808055	88.17	-0.005587679	17,542.19	-0.006951397
342	17-May-05	9,441.51	-0.005186495	11,930.26	-0.002738159	88.10	-0.000856657	17,361.01	-0.010381744
343	18-May-05	9,439.15	-0.000249673	11,903.25	-0.002266631	87.69	-0.004683634	17,303.59	-0.003312962
344	19-May-05	9,445.47	0.000668849	11,967.62	0.005393262	88.16	0.005384362	17,371.61	0.003923258
345	20-May-05	9,460.85	0.001626972	11,959.67	-0.000664522	87.97	-0.002109880	17,377.72	0.000351975
346	23-May-05	9,450.10	-0.001136886	11,867.53	-0.007734350	87.49	-0.005501241	17,272.29	-0.006085787
347	24-May-05	9,470.16	0.002120057	11,907.75	0.003383640	88.07	0.006546526	17,339.91	0.003907606
348	25-May-05	9,466.21	-0.000416580	11,910.67	0.000244905	88.11	0.000439637	17,320.18	-0.001138515
349	26-May-05	9,517.93	0.005448664	11,947.24	0.003065508	88.22	0.001242228	17,397.36	0.004445951
350	27-May-05	9,481.37	-0.003848107	11,872.42	-0.006281693	87.93	-0.003270039	17,281.67	-0.006672015
351	30-May-05	9,484.05	0.000282051	11,879.63	0.000606303	87.92	-0.000135900	17,294.71	0.000754229
352	31-May-05	9,506.42	0.002355820	11,784.78	-0.008016147	87.81	-0.001161699	17,252.64	-0.002435350
353	01-Jun-05	9,541.07	0.003638081	11,762.60	-0.001883957	88.03	0.002457432	17,358.04	0.006090329
354	02-Jun-05	9,580.73	0.004148230	11,704.07	-0.004988428	88.36	0.003776830	17,365.50	0.000429912
355	03-Jun-05	9,575.62	-0.000533022	11,781.07	0.006557532	88.83	0.005250680	17,419.43	0.003100875
356	06-Jun-05	9,590.52	0.001554691	11,761.67	-0.001648120	89.29	0.005154240	17,425.84	0.000367620
357	07-Jun-05	9,567.83	-0.002368825	11,743.59	-0.001538095	89.43	0.001619327	17,451.77	0.001487310
358	08-Jun-05	9,575.47	0.000797862	11,798.78	0.004688640	89.54	0.001211446	17,586.70	0.007701715
359	09-Jun-05	9,593.22	0.001852478	11,735.25	-0.005399283	89.45	-0.001023607	17,519.05	-0.003854309
360	10-Jun-05	9,610.36	0.001784596	11,746.84	0.000987674	89.37	-0.000844682	17,479.19	-0.002277612
361	14-Jun-05	9,607.38	-0.000309549	11,637.60	-0.009343072	87.79	-0.017866164	17,342.31	-0.007861908
362	15-Jun-05	9,588.90	-0.001925750	11,550.23	-0.007536262	87.82	0.000315970	17,347.23	0.000283566
363	16-Jun-05	9,627.56	0.004023438	11,631.53	0.007014216	88.06	0.002803906	17,518.96	0.009850801
364	17-Jun-05	9,636.06	0.000882683	11,661.44	0.002568394	88.42	0.004076548	17,543.03	0.001373280
365	20-Jun-05	9,620.53	-0.001612699	11,740.97	0.006796872	88.41	-0.000105734	17,560.46	0.000992944
366	21-Jun-05	9,655.62	0.003640483	11,718.85	-0.001886244	88.34	-0.000836173	17,601.69	0.002345291
367	22-Jun-05	9,655.62	-0.000000172	11,749.80	0.002638133	88.94	0.006806263	17,650.93	0.002793267
368	23-Jun-05	9,652.60	-0.000312452	11,689.00	-0.005188403	88.84	-0.001124699	17,564.97	-0.004881601
369	24-Jun-05	9,646.28	-0.000654717	11,605.61	-0.007159441	88.54	-0.003473416	17,517.65	-0.002697977
370	27-Jun-05	9,663.42	0.001774900	11,721.31	0.009919917	88.42	-0.001328509	17,629.21	0.006348305
371	28-Jun-05	9,678.47	0.001556347	11,762.38	0.003497571	88.27	-0.001679075	17,668.73	0.002239117
372	29-Jun-05	9,698.52	0.002069431	11,701.72	-0.005170080	88.13	-0.001643067	17,633.46	-0.001997939
373	30-Jun-05	9,718.48	0.002055626	11,752.97	0.004369730	88.21	0.000962123	17,571.02	-0.003547149
374	01-Jul-05	9,766.46	0.004925262	11,760.41	0.000632628	87.93	-0.003173614	17,416.47	-0.008834765
375	04-Jul-05	9,814.62	0.004918766	11,705.11	-0.004713391	87.95	0.000250693	17,299.01	-0.006766914
376	05-Jul-05	9,874.55	0.006087869	11,751.91	0.003990300	88.30	0.003987624	17,360.39	0.003541985
377	06-Jul-05	9,795.59	-0.008028513	11,688.06	-0.005447492	87.79	-0.005830122	17,232.08	-0.007418682
378	07-Jul-05	9,824.35	0.002931615	11,714.19	0.002233293	87.55	-0.002750068	17,193.19	-0.002259365
379	08-Jul-05	9,806.26	-0.001842913	11,702.51	-0.000998227	87.28	-0.003102951	17,082.84	-0.006438822
380	11-Jul-05	9,736.31	-0.007158584	11,689.55	-0.001107788	86.99	-0.003268439	16,956.42	-0.007428031
381	12-Jul-05	9,769.52	0.003404798	11,879.15	0.016089634	87.69	0.008022376	17,229.79	0.015993535
382	13-Jul-05	9,769.54	0.000001915	11,925.63	0.003904715	87.90	0.002384707	17,322.69	0.005376963
383	14-Jul-05	9,809.69	0.004101512	11,837.16	-0.007445774	87.74	-0.001869148	17,290.64	-0.001851675
384	15-Jul-05	9,811.12	0.000145906	11,879.53	0.003572928	87.49	-0.002886539	17,265.92	-0.001430860
385	18-Jul-05	9,794.56	-0.001689601	11,805.76	-0.006229471	87.35	-0.001531579	17,178.29	-0.005088256
386	19-Jul-05	9,809.64	0.001538530	11,779.09	-0.002261154	87.35	-0.000010769	17,089.52	-0.005180950
387	20-Jul-05	9,840.47	0.003137904	11,881.22	0.008632893	87.01	-0.003912869	17,106.54	0.000995595
388	21-Jul-05	9,831.36	-0.000926291	11,946.85	0.005508315	87.27	0.003031312	17,130.39	0.001393497
389	22-Jul-05	9,774.06	-0.005844737	11,896.36	-0.004234848	88.13	0.009750673	17,141.55	0.000650881
390	25-Jul-05	9,820.37	0.004727068	11,840.03	-0.004746695	88.01	-0.001316010	17,061.50	-0.004680580

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		USD		EUR		JPY		GBP	
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391	26-Jul-05	9,831.60	0.001142493	11,839.35	-0.000056731	87.82	-0.002154757	17,128.12	0.003897060
392	27-Jul-05	9,834.48	0.000292872	11,803.88	-0.003000918	87.24	-0.006644496	17,073.56	-0.003190467
393	28-Jul-05	9,831.83	-0.000269324	11,861.02	0.004829476	87.42	0.002082788	17,135.93	0.003646378
394	29-Jul-05	9,819.62	-0.001243110	11,909.93	0.004115159	87.55	0.001377929	17,235.96	0.005820279
395	02-Aug-05	9,782.64	-0.003773143	11,947.87	0.003179852	87.48	-0.000720468	17,326.07	0.005214205
396	03-Aug-05	9,756.35	-0.002690417	11,871.21	-0.006436080	87.22	-0.002966216	17,232.76	-0.005399743
397	04-Aug-05	9,768.07	0.001200698	12,048.91	0.014857280	87.98	0.008636872	17,366.97	0.007757529
398	05-Aug-05	9,737.56	-0.003128795	12,047.90	-0.000083244	87.21	-0.008766661	17,301.48	-0.003778008
399	08-Aug-05	9,771.09	0.003437671	12,046.44	-0.000121036	86.98	-0.002642727	17,343.86	0.002446591
400	09-Aug-05	9,790.93	0.002028364	12,148.18	0.008410185	87.57	0.006690471	17,539.79	0.011233757
401	10-Aug-05	9,786.26	-0.000477507	12,111.33	-0.003038537	87.97	0.004555852	17,522.89	-0.000964063
402	11-Aug-05	9,766.11	-0.002060649	12,103.06	-0.000682892	88.55	0.006605239	17,556.65	0.001924367
403	12-Aug-05	9,830.49	0.006569967	12,243.35	0.011524828	89.51	0.010837171	17,787.40	0.013057986
404	15-Aug-05	9,861.33	0.003132327	12,217.41	-0.002121511	89.93	0.004646536	17,890.90	0.005801700
405	16-Aug-05	9,881.39	0.002032117	12,199.87	-0.001436197	90.38	0.004978617	17,867.08	-0.001332590
406	17-Aug-05	9,900.63	0.001945278	12,195.20	-0.000382925	90.28	-0.001068659	17,883.80	0.000935510
407	18-Aug-05	9,964.48	0.006428923	12,221.68	0.002169311	90.38	0.001111767	17,971.53	0.004893699
408	19-Aug-05	9,980.05	0.001561346	12,144.01	-0.006375498	90.32	-0.000655912	17,877.56	-0.005242516
409	22-Aug-05	10,009.29	0.002925609	12,193.11	0.004034763	90.84	0.005724321	18,005.73	0.007143817
410	23-Aug-05	10,084.69	0.007504372	12,307.82	0.009363502	91.70	0.009373134	18,132.29	0.007003978
411	24-Aug-05	10,199.42	0.011311969	12,424.29	0.009418997	92.27	0.006188569	18,292.80	0.008813366
412	25-Aug-05	10,340.37	0.013725223	12,717.83	0.023351573	94.08	0.019483978	18,661.90	0.019976769
413	26-Aug-05	10,410.07	0.006718383	12,822.80	0.008219974	94.58	0.005327252	18,779.73	0.006294020
414	29-Aug-05	10,479.97	0.006691675	12,915.11	0.007172470	94.96	0.003918847	18,925.50	0.007732007
415	30-Aug-05	10,949.77	0.043853066	13,376.31	0.035087330	98.71	0.038784605	19,633.53	0.036728674
416	31-Aug-05	10,475.17	-0.044310959	12,785.49	-0.045173759	94.10	-0.047880996	18,700.12	-0.048709056
417	01-Sep-05	10,475.37	0.000019102	12,922.25	0.010639314	94.53	0.004569882	18,880.67	0.009608642
418	02-Sep-05	10,349.75	-0.012064388	12,927.03	0.000369926	94.17	-0.003770980	18,974.54	0.004959721
419	05-Sep-05	10,351.01	0.000122017	13,014.06	0.006709697	94.79	0.006499705	19,111.86	0.007210699
420	06-Sep-05	10,365.11	0.001360509	12,967.37	-0.003593594	94.81	0.000272488	19,089.82	-0.001153898
421	07-Sep-05	10,375.20	0.000972902	12,945.38	-0.001697231	94.38	-0.004534935	19,080.02	-0.000513406
422	08-Sep-05	10,370.32	-0.000469805	12,887.13	-0.004510059	94.04	-0.003657937	19,043.19	-0.001932230
423	09-Sep-05	10,285.20	-0.008242541	12,792.65	-0.007358594	93.01	-0.010960175	18,917.50	-0.006621958
424	12-Sep-05	10,064.68	-0.021672987	12,418.20	-0.029707752	91.82	-0.012896260	18,466.65	-0.024121034
425	13-Sep-05	10,070.07	0.000534709	12,387.87	-0.002445146	91.24	-0.006332306	18,347.52	-0.006472156
426	14-Sep-05	10,015.59	-0.005424755	12,306.10	-0.006622915	90.50	-0.008107855	18,294.19	-0.002910909
427	15-Sep-05	10,070.21	0.005439229	12,311.24	0.000417745	91.13	0.006867424	18,314.02	0.001083626
428	16-Sep-05	10,119.59	0.004891321	12,436.10	0.010091187	91.51	0.004210487	18,339.22	0.001375070
429	19-Sep-05	10,165.16	0.004493041	12,321.26	-0.009277622	91.04	-0.005153226	18,307.37	-0.001738617
430	20-Sep-05	10,175.64	0.001030910	12,361.31	0.003245235	91.31	0.002972067	18,346.24	0.002120917
431	21-Sep-05	10,235.28	0.005843437	12,476.63	0.009285816	91.61	0.003257262	18,483.57	0.007457746
432	22-Sep-05	10,230.17	-0.000499356	12,493.25	0.001331416	91.68	0.000740785	18,497.53	0.000755147
433	23-Sep-05	10,199.97	-0.002955964	12,396.87	-0.007744860	91.37	-0.003346372	18,281.07	-0.011771404
434	26-Sep-05	10,225.53	0.002502800	12,306.35	-0.007328374	91.03	-0.003764267	18,161.16	-0.006580517
435	27-Sep-05	10,256.00	0.002975166	12,325.84	0.001582620	90.86	-0.001890080	18,145.98	-0.000836571
436	28-Sep-05	10,319.47	0.006169484	12,415.82	0.007273486	91.30	0.004841423	18,268.29	0.006717825
437	29-Sep-05	10,410.58	0.008790039	12,549.18	0.010683505	92.15	0.009270660	18,397.67	0.007057662
438	30-Sep-05	10,215.36	-0.018929727	12,296.87	-0.020310173	90.40	-0.019153336	17,990.29	-0.022392278
439	04-Oct-05	10,264.50	0.004798610	12,244.61	-0.004258837	89.94	-0.005133507	18,028.98	0.002148410
440	05-Oct-05	10,107.88	-0.015376141	12,070.70	-0.014304970	88.71	-0.013770952	17,809.46	-0.012250758
441	06-Oct-05	10,050.13	-0.005729610	12,103.59	0.002721206	88.28	-0.004794662	17,811.55	0.000117491
442	07-Oct-05	10,057.85	0.000767570	12,232.17	0.010567319	88.60	0.003612506	17,861.31	0.002789910
443	10-Oct-05	10,047.48	-0.001031387	12,184.90	-0.003871933	88.31	-0.003264781	17,683.38	-0.010011840
444	11-Oct-05	10,145.21	0.009680175	12,204.22	0.001584592	88.94	0.007019090	17,756.47	0.004124727
445	12-Oct-05	10,102.46	-0.004222987	12,094.95	-0.008994146	88.14	-0.009045785	17,602.60	-0.008703492
446	13-Oct-05	10,138.35	0.003546434	12,152.77	0.004768861	88.36	0.002536357	17,706.78	0.005901428

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		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
447	14-Oct-05	10,121.04	-0.001708860	12,162.72	0.000818991	88.33	-0.000299661	17,749.01	0.002381798
448	17-Oct-05	10,090.26	-0.003046351	12,194.42	0.002602435	88.40	0.000706197	17,845.07	0.005397641
449	18-Oct-05	10,109.70	0.001924905	12,118.35	-0.006257854	87.62	-0.008839844	17,685.47	-0.008984081
450	19-Oct-05	10,109.68	-0.000001451	12,075.41	-0.003549158	87.35	-0.003108800	17,675.40	-0.000569518
451	20-Oct-05	10,094.77	-0.001476563	12,085.33	0.000821115	87.29	-0.000609096	17,778.56	0.005819608
452	21-Oct-05	10,074.57	-0.002003092	12,125.00	0.003277052	87.25	-0.000526346	17,861.19	0.004636878
453	24-Oct-05	10,069.50	-0.000503087	12,019.78	-0.008715559	86.94	-0.003546296	17,789.85	-0.004002317
454	25-Oct-05	10,025.32	-0.004397190	11,988.84	-0.002577275	86.69	-0.002844879	17,701.18	-0.004996770
455	26-Oct-05	9,965.62	-0.005972495	12,063.06	0.006171303	86.59	-0.001132372	17,763.37	0.003507647
456	27-Oct-05	9,985.47	0.001989166	12,081.53	0.001530330	86.46	-0.001477438	17,785.36	0.001236966
457	28-Oct-05	10,005.29	0.001983297	12,140.22	0.004845788	86.73	0.003040123	17,842.49	0.003206972
458	31-Oct-05	10,049.42	0.004400977	12,108.14	-0.002645829	86.86	0.001548049	17,825.16	-0.000971753
459	01-Nov-05	10,184.94	0.013395044	12,199.04	0.007478814	87.41	0.006247831	18,009.48	0.010287275
460	02-Nov-05	10,079.35	-0.010420652	12,138.00	-0.005016140	86.30	-0.012779651	17,813.17	-0.010960223
461	03-Nov-05	10,051.25	-0.002792460	12,132.51	-0.000452361	86.02	-0.003180322	17,842.95	0.001670455
462	04-Nov-05	10,055.55	0.000427772	12,000.00	-0.010981857	85.44	-0.006819219	17,772.99	-0.003928638
463	07-Nov-05	10,070.95	0.001530618	11,899.08	-0.008445472	85.44	0.000001388	17,624.16	-0.008408874
464	08-Nov-05	10,093.16	0.002203165	11,834.54	-0.005438959	85.64	0.002393538	17,536.30	-0.004997862
465	09-Nov-05	10,038.13	-0.005467829	11,808.43	-0.002208922	85.57	-0.000831664	17,489.92	-0.002648527
466	10-Nov-05	9,990.45	-0.004761083	11,745.55	-0.005339031	84.84	-0.008565863	17,393.68	-0.005517607
467	11-Nov-05	9,964.51	-0.002600106	11,656.02	-0.007651443	84.68	-0.001966039	17,366.17	-0.001583044
468	14-Nov-05	10,005.45	0.004100836	11,771.97	0.009898392	84.82	0.001685617	17,457.79	0.005261983
469	15-Nov-05	10,023.34	0.001785810	11,720.71	-0.004364171	84.35	-0.005557844	17,423.05	-0.001991865
470	16-Nov-05	10,001.37	-0.002193998	11,717.17	-0.000301609	83.86	-0.005856081	17,338.08	-0.004888867
471	17-Nov-05	10,023.24	0.002184133	11,700.97	-0.001383403	84.37	0.006172742	17,217.66	-0.006969729
472	18-Nov-05	10,070.99	0.004752918	11,805.09	0.008858663	84.61	0.002765798	17,288.49	0.004105730
473	21-Nov-05	10,105.00	0.003371833	11,905.53	0.008472051	84.71	0.001142837	17,357.70	0.003994784
474	22-Nov-05	10,055.84	-0.004877711	11,793.64	-0.009442072	84.43	-0.003286292	17,264.44	-0.005387164
475	23-Nov-05	10,073.25	0.001730297	11,898.73	0.008871349	84.92	0.005786203	17,346.41	0.004737061
476	24-Nov-05	10,051.48	-0.002163863	11,877.70	-0.001769221	84.65	-0.003206792	17,320.26	-0.001508824
477	25-Nov-05	10,065.22	0.001366112	11,849.01	-0.002418624	84.39	-0.002986549	17,336.77	0.000952436
478	28-Nov-05	10,064.09	-0.000112503	11,770.05	-0.006685786	83.99	-0.004789930	17,233.25	-0.005988909
479	29-Nov-05	10,044.60	-0.001937916	11,874.10	0.008801274	84.24	0.003024424	17,311.90	0.004553780
480	30-Nov-05	10,024.36	-0.002017054	11,805.87	-0.005763184	83.86	-0.004615609	17,221.58	-0.005231267
481	01-Dec-05	10,025.73	0.000136388	11,812.38	0.000551681	83.64	-0.002553819	17,327.40	0.006126293
482	02-Dec-05	10,029.62	0.000388308	11,760.34	-0.004415223	83.20	-0.005285849	17,355.55	0.001622732
483	05-Dec-05	9,994.64	-0.003494267	11,687.05	-0.006251615	82.36	-0.010215571	17,290.65	-0.003746065
484	06-Dec-05	9,928.12	-0.006677979	11,700.66	0.001163833	82.07	-0.003433091	17,287.90	-0.000159172
485	07-Dec-05	9,865.19	-0.006358281	11,615.59	-0.007296986	81.59	-0.005938156	17,152.47	-0.007864549
486	08-Dec-05	9,817.60	-0.004836009	11,505.82	-0.009495545	81.33	-0.003118554	17,035.14	-0.006863962
487	09-Dec-05	9,740.62	-0.007871316	11,506.91	0.000095435	80.85	-0.005903610	17,065.95	0.001807051
488	12-Dec-05	9,729.98	-0.001093046	11,521.50	0.001266745	80.54	-0.003959641	17,119.12	0.003110604
489	13-Dec-05	9,755.32	0.002601140	11,665.35	0.012407993	81.41	0.010839866	17,310.49	0.011116734
490	14-Dec-05	9,830.26	0.007652387	11,811.66	0.012464674	82.67	0.015321678	17,438.25	0.007353355
491	15-Dec-05	9,823.77	-0.000660445	11,783.22	-0.002411261	83.77	0.013268602	17,399.67	-0.002214736
492	16-Dec-05	9,855.11	0.003185175	11,785.66	0.000207070	85.14	0.016190573	17,386.98	-0.000729544
493	19-Dec-05	9,915.55	0.006113952	11,913.35	0.010776471	85.28	0.001601248	17,557.56	0.009762843
494	20-Dec-05	9,837.62	-0.007890542	11,786.64	-0.010693005	84.36	-0.010841215	17,309.52	-0.014227763
495	21-Dec-05	9,850.26	0.001284064	11,689.82	-0.008248174	84.07	-0.003410510	17,294.46	-0.000870925
496	22-Dec-05	9,806.43	-0.004459010	11,605.10	-0.007274124	83.56	-0.006053564	17,108.20	-0.010827789
497	23-Dec-05	9,860.39	0.005486889	11,708.11	0.008837303	84.58	0.012133084	17,148.30	0.002340783
498	28-Dec-05	9,840.48	-0.002020690	11,656.62	-0.004407356	83.88	-0.008327683	17,013.79	-0.007874747
499	29-Dec-05	9,839.51	-0.000099378	11,657.73	0.000094906	83.47	-0.004868519	16,945.43	-0.004026073
500	30-Dec-05	9,825.54	-0.001420225	11,674.49	0.001437154	83.85	0.004424569	16,978.33	0.001939867
501	03-Jan-06	9,760.07	-0.006686232	11,594.20	-0.006901233	83.29	-0.006585040	16,865.78	-0.006651464
502	04-Jan-06	9,667.43	-0.009536600	11,663.42	0.005952037	83.50	0.002437878	16,921.99	0.003327399

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
503	05-Jan-06	9,625.42	-0.004355153	11,644.28	-0.001642273	82.87	-0.007519042	16,909.52	-0.000737239
504	06-Jan-06	9,590.47	-0.003637303	11,595.47	-0.004200547	82.60	-0.003347398	16,817.65	-0.005447834
505	09-Jan-06	9,445.11	-0.015273055	11,470.26	-0.010857162	82.99	0.004800476	16,737.24	-0.004792762
506	10-Jan-06	9,455.49	0.001098759	11,401.67	-0.005997123	82.44	-0.006671914	16,698.09	-0.002341675
507	11-Jan-06	9,485.61	0.003179954	11,445.57	0.003842603	82.82	0.004530560	16,720.70	0.001352793
508	12-Jan-06	9,364.49	-0.012850693	11,365.90	-0.006985052	82.07	-0.009014469	16,541.16	-0.010795375
509	13-Jan-06	9,384.66	0.002151078	11,298.91	-0.005911484	81.87	-0.002431233	16,520.52	-0.001248826
510	16-Jan-06	9,375.58	-0.000967748	11,397.56	0.008692679	82.02	0.001743357	16,663.53	0.008619605
511	17-Jan-06	9,494.63	0.012617852	11,502.49	0.009164699	82.58	0.006848726	16,767.39	0.006213501
512	18-Jan-06	9,470.45	-0.002550088	11,450.28	-0.004549159	81.83	-0.009057817	16,702.83	-0.003857920
513	19-Jan-06	9,504.35	0.003573902	11,497.33	0.004100063	82.47	0.007744619	16,741.39	0.002305766
514	20-Jan-06	9,429.75	-0.007879934	11,390.55	-0.009330715	81.57	-0.010945369	16,563.45	-0.010685304
515	23-Jan-06	9,409.74	-0.002125136	11,518.10	0.011136234	82.07	0.006049955	16,750.89	0.011252481
516	24-Jan-06	9,444.52	0.003689613	11,602.03	0.007259985	82.27	0.002448384	16,852.86	0.006069508
517	25-Jan-06	9,419.83	-0.002617790	11,559.44	-0.003677738	81.79	-0.005836835	16,794.78	-0.003452473
518	27-Jan-06	9,369.76	-0.005328745	11,443.65	-0.010067232	80.59	-0.014761223	16,679.29	-0.006900330
519	30-Jan-06	9,384.59	0.001581519	11,344.20	-0.008728543	79.97	-0.007776009	16,576.28	-0.006195118
520	31-Jan-06	9,387.48	0.000307745	11,356.31	0.001067432	79.81	-0.001925326	16,607.77	0.001898182
521	01-Feb-06	9,315.03	-0.007747769	11,323.60	-0.002884867	79.50	-0.003947490	16,579.75	-0.001688759
522	02-Feb-06	9,343.09	0.003007034	11,268.64	-0.004864993	78.99	-0.006457186	16,574.66	-0.000306877
523	03-Feb-06	9,302.51	-0.004352149	11,248.19	-0.001816595	78.56	-0.005443295	16,553.19	-0.001296332
524	06-Feb-06	9,252.41	-0.005400131	11,120.77	-0.011392677	78.02	-0.006937761	16,291.58	-0.015930623
525	07-Feb-06	9,213.47	-0.004217900	11,026.76	-0.008490029	77.44	-0.007421170	16,111.63	-0.011106650
526	08-Feb-06	9,262.97	0.005358673	11,086.43	0.005396868	78.46	0.013092105	16,159.30	0.002954111
527	09-Feb-06	9,248.55	-0.001558532	11,074.61	-0.001066757	77.98	-0.006098649	16,127.74	-0.001955001
528	10-Feb-06	9,195.40	-0.005762860	11,021.07	-0.004846012	77.65	-0.004250231	16,045.30	-0.005124513
529	13-Feb-06	9,234.63	0.004257108	10,988.21	-0.002985760	78.34	0.008760749	16,098.89	0.003333962
530	14-Feb-06	9,235.05	0.000044963	10,994.67	0.000587630	78.61	0.003469643	16,089.32	-0.000594543
531	15-Feb-06	9,219.66	-0.001667837	10,991.47	-0.000291266	78.41	-0.002478347	16,007.97	-0.005068942
532	16-Feb-06	9,223.17	0.000380906	10,961.88	-0.002695789	78.34	-0.000903288	16,050.40	0.002647072
533	17-Feb-06	9,234.00	0.001173193	10,976.51	0.001334055	78.17	-0.002154979	16,027.72	-0.001414131
534	20-Feb-06	9,233.88	-0.000012415	11,054.42	0.007072273	78.19	0.000162351	16,115.82	0.005481685
535	21-Feb-06	9,254.94	0.002278416	11,035.37	-0.001724086	78.07	-0.001475884	16,132.23	0.001017872
536	22-Feb-06	9,293.35	0.004141489	11,077.94	0.003849903	78.33	0.003334141	16,221.64	0.005527216
537	23-Feb-06	9,320.56	0.002923264	11,100.50	0.002034477	79.18	0.010716958	16,261.26	0.002439232
538	24-Feb-06	9,293.43	-0.002914546	11,082.65	-0.001609607	79.64	0.005801642	16,289.37	0.001726940
539	27-Feb-06	9,263.47	-0.003229288	10,998.23	-0.007646184	79.83	0.002393457	16,159.66	-0.007994603
540	28-Feb-06	9,227.85	-0.003852612	10,942.97	-0.005037101	79.29	-0.006725055	16,062.25	-0.006046242
541	01-Mar-06	9,169.58	-0.006334465	10,951.62	0.000789566	79.27	-0.000318706	16,094.97	0.002034918
542	02-Mar-06	9,181.65	0.001314862	10,945.15	-0.000590879	78.93	-0.004263681	16,061.96	-0.002053109
543	03-Mar-06	9,192.96	0.001231718	11,057.99	0.010256908	78.94	0.000176864	16,104.45	0.002641809
544	06-Mar-06	9,196.88	0.000426390	11,093.47	0.003203780	78.53	-0.005227694	16,166.19	0.003826920
545	07-Mar-06	9,197.83	0.000103045	10,999.84	-0.008476247	78.18	-0.004432970	16,054.87	-0.006909932
546	08-Mar-06	9,304.00	0.011477082	11,067.73	0.006152693	79.14	0.012090417	16,164.22	0.006787877
547	09-Mar-06	9,373.56	0.007447670	11,201.69	0.012031324	79.68	0.006868424	16,291.92	0.007869185
548	10-Mar-06	9,298.84	-0.008002597	11,069.69	-0.011853629	78.40	-0.016239984	16,135.13	-0.009670630
549	13-Mar-06	9,237.69	-0.006597819	11,037.97	-0.002870105	77.73	-0.008577213	15,950.08	-0.011534809
550	14-Mar-06	9,190.18	-0.005156175	11,003.92	-0.003089458	77.54	-0.002470926	15,951.25	0.000073460
551	15-Mar-06	9,132.73	-0.006271409	10,975.61	-0.002575850	77.73	0.002485104	15,949.91	-0.000084552
552	16-Mar-06	9,143.28	0.001154977	11,017.64	0.003822226	77.70	-0.000395493	15,960.72	0.000677760
553	17-Mar-06	9,162.93	0.002146438	11,150.98	0.012029999	78.52	0.010474289	16,093.08	0.008258625
554	20-Mar-06	9,128.52	-0.003762799	11,111.11	-0.003582133	78.53	0.000159548	16,017.42	-0.004712361
555	21-Mar-06	9,128.14	-0.000041105	11,076.48	-0.003121443	78.27	-0.003255726	15,997.57	-0.001240285
556	22-Mar-06	9,116.38	-0.001289675	11,024.78	-0.004679000	77.79	-0.006255374	15,930.35	-0.004210809
557	23-Mar-06	9,080.52	-0.003940510	10,949.10	-0.006887785	77.66	-0.001617943	15,839.61	-0.005711994
558	24-Mar-06	9,105.61	0.002758939	10,897.00	-0.004769456	77.18	-0.006142272	15,800.39	-0.002479189

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
559	27-Mar-06	9,073.32	-0.003553083	10,936.49	0.003616891	77.91	0.009372352	15,851.43	0.003225154
560	28-Mar-06	9,021.54	-0.005722664	10,829.81	-0.009802076	77.07	-0.010913538	15,752.21	-0.006278980
561	29-Mar-06	9,099.84	0.008642124	10,921.37	0.008418454	77.21	0.001852743	15,857.53	0.006663824
562	30-Mar-06	9,139.80	0.004381316	11,035.19	0.010367713	77.75	0.006970270	15,911.76	0.003414106
563	31-Mar-06	9,160.50	0.002261952	11,136.02	0.009095661	78.02	0.003549801	15,987.32	0.004737358
564	03-Apr-06	9,040.56	-0.013179407	10,894.99	-0.021881141	76.29	-0.022495228	15,639.97	-0.021966233
565	04-Apr-06	8,999.86	-0.004512066	10,935.74	0.003733107	76.48	0.002509863	15,652.60	0.000807043
566	05-Apr-06	8,999.45	-0.000046008	11,040.46	0.009530393	76.95	0.006141309	15,815.88	0.010377526
567	06-Apr-06	9,005.49	0.000671071	11,063.36	0.002072152	76.64	-0.004063227	15,792.64	-0.001470508
568	07-Apr-06	9,000.55	-0.000548630	10,985.96	-0.007020751	76.42	-0.002823888	15,768.77	-0.001512571
569	10-Apr-06	8,983.66	-0.001878488	10,883.53	-0.009367924	76.04	-0.005032416	15,670.82	-0.006231026
570	11-Apr-06	8,989.89	0.000693140	10,903.51	0.001834773	75.87	-0.002270054	15,678.19	0.000470124
571	12-Apr-06	8,992.36	0.000275733	10,926.11	0.002070162	76.06	0.002502391	15,736.10	0.003687043
572	13-Apr-06	9,004.38	0.001335578	10,896.59	-0.002705808	76.01	-0.000612405	15,778.74	0.002705808
573	18-Apr-06	8,973.08	-0.003482921	10,996.52	0.009129146	76.12	0.001374997	15,892.64	0.007192991
574	19-Apr-06	8,969.18	-0.000433860	11,073.27	0.006955238	76.66	0.007146566	15,967.90	0.004723929
575	20-Apr-06	8,895.15	-0.008288006	10,988.39	-0.007694528	75.64	-0.013431422	15,908.76	-0.003710117
576	21-Apr-06	8,900.03	0.000547719	10,950.00	-0.003499930	75.68	0.000571704	15,831.33	-0.004879530
577	24-Apr-06	8,820.45	-0.008981331	10,902.31	-0.004365173	76.27	0.007740207	15,758.81	-0.004590964
578	26-Apr-06	8,839.45	0.002152033	10,984.18	0.007481759	76.81	0.007096663	15,798.80	0.002534512
579	27-Apr-06	8,803.67	-0.004056485	10,965.23	-0.001726522	76.80	-0.000214548	15,720.39	-0.004975590
580	28-Apr-06	8,800.05	-0.000410790	11,024.92	0.005428367	77.03	0.003039689	15,855.23	0.008540974
581	01-May-06	8,785.13	-0.001696927	11,098.39	0.006642217	77.67	0.008268692	16,052.32	0.012353604
582	02-May-06	8,763.39	-0.002477881	11,013.96	-0.007636294	77.02	-0.008417482	15,970.11	-0.005134071
583	03-May-06	8,768.57	0.000590705	11,091.15	0.006983578	77.43	0.005363281	16,163.82	0.012056613
584	04-May-06	8,797.39	0.003281911	11,108.92	0.001600768	77.22	-0.002782599	16,180.21	0.001012980
585	05-May-06	8,786.62	-0.001225865	11,151.69	0.003842487	77.26	0.000470920	16,262.65	0.005082456
586	08-May-06	8,732.01	-0.006234006	11,121.20	-0.002737256	78.21	0.012335427	16,248.49	-0.000870990
587	09-May-06	8,747.56	0.001779284	11,108.18	-0.001172057	78.37	0.002036273	16,238.53	-0.000613171
588	10-May-06	8,722.80	-0.002834921	11,137.94	0.002676188	78.65	0.003521886	16,281.43	0.002638333
589	11-May-06	8,742.38	0.002242756	11,134.41	-0.000317011	78.61	-0.000531369	16,224.74	-0.003488327
590	12-May-06	8,728.28	-0.001614585	11,234.26	0.008927629	79.29	0.008655266	16,474.73	0.015290909
591	15-May-06	9,004.41	0.031146602	11,643.17	0.035751507	82.15	0.035453864	17,073.59	0.035705022
592	16-May-06	9,314.37	0.033843344	11,945.19	0.025609183	84.66	0.030106616	17,560.55	0.028122235
593	17-May-06	9,035.36	-0.030412242	11,633.75	-0.026418793	82.57	-0.025031701	17,097.17	-0.026742106
594	18-May-06	9,125.00	0.009871975	11,632.00	-0.000149881	82.36	-0.002516964	17,182.85	0.004999035
595	19-May-06	9,152.36	0.002994387	11,743.15	0.009509950	82.48	0.001406412	17,304.93	0.007079353
596	22-May-06	9,315.31	0.017646537	11,850.53	0.009102812	82.86	0.004549702	17,404.18	0.005719078
597	23-May-06	9,295.57	-0.002120976	11,953.26	0.008630986	83.61	0.009015070	17,526.26	0.006990031
598	24-May-06	9,354.54	0.006323746	11,954.08	0.000068879	83.17	-0.005182740	17,541.80	0.000886203
599	25-May-06	9,389.63	0.003744046	11,986.08	0.002673236	83.33	0.001824362	17,551.58	0.000557175
600	26-May-06	9,280.63	-0.011675947	11,854.59	-0.011030508	82.80	-0.006297196	17,366.86	-0.010579867
601	29-May-06	9,250.36	-0.003266905	11,785.77	-0.005822267	82.36	-0.005333742	17,204.22	-0.009409205
602	30-May-06	9,203.10	-0.005122585	11,795.39	0.000815498	82.15	-0.002556393	17,194.02	-0.000593443
603	31-May-06	9,194.60	-0.000923357	11,835.81	0.003420589	82.09	-0.000773142	17,314.43	0.006978693
604	01-Jun-06	9,265.49	0.007680057	11,837.57	0.000149077	82.31	0.002711848	17,297.43	-0.000982009
605	02-Jun-06	9,295.28	0.003210276	11,910.73	0.006161238	82.45	0.001662313	17,340.66	0.002496257
606	05-Jun-06	9,255.52	-0.004287356	11,982.79	0.006031669	82.89	0.005356417	17,435.51	0.005454743
607	06-Jun-06	9,325.56	0.007538814	12,032.87	0.004170924	82.98	0.001020138	17,461.71	0.001501560
608	07-Jun-06	9,372.55	0.005027028	12,011.07	-0.001813768	82.72	-0.003082821	17,434.74	-0.001545907
609	08-Jun-06	9,414.84	0.004501891	12,036.72	0.002133450	82.81	0.001110693	17,476.33	0.002382849
610	09-Jun-06	9,429.53	0.001558721	11,922.95	-0.009497109	82.76	-0.000580334	17,384.31	-0.005279434
611	13-Jun-06	9,490.22	0.006415785	11,939.26	0.001367342	82.82	0.000646969	17,465.87	0.004680708
612	14-Jun-06	9,505.62	0.001621250	11,947.57	0.000695386	82.57	-0.002939015	17,466.40	0.000030274
613	15-Jun-06	9,424.28	-0.008594475	11,886.21	-0.005148448	81.98	-0.007199167	17,388.15	-0.004489994
614	16-Jun-06	9,320.05	-0.011121006	11,786.14	-0.008454828	81.24	-0.009042196	17,266.15	-0.007041106

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
615	19-Jun-06	9,361.10	0.004394552	11,790.53	0.000372810	80.97	-0.003390467	17,269.77	0.000209556
616	20-Jun-06	9,384.89	0.002538116	11,812.15	0.001831511	81.57	0.007450038	17,307.40	0.002176863
617	21-Jun-06	9,353.62	-0.003337351	11,803.75	-0.000710944	81.53	-0.000547862	17,262.29	-0.002610013
618	22-Jun-06	9,343.51	-0.001081227	11,834.05	0.002563009	81.29	-0.002942390	17,236.48	-0.001496260
619	23-Jun-06	9,395.26	0.005523403	11,811.64	-0.001894837	80.99	-0.003690374	17,184.85	-0.002999794
620	26-Jun-06	9,404.21	0.000952011	11,770.14	-0.003520119	80.82	-0.002087355	17,110.89	-0.004313248
621	27-Jun-06	9,389.48	-0.001567482	11,826.30	0.004759828	80.76	-0.000715496	17,122.27	0.000664636
622	28-Jun-06	9,352.37	-0.003960007	11,759.15	-0.005694036	80.45	-0.003852936	17,048.57	-0.004313541
623	29-Jun-06	9,338.28	-0.001508227	11,719.50	-0.003377039	80.19	-0.003241146	16,975.29	-0.004307256
624	30-Jun-06	9,280.24	-0.006234556	11,809.62	0.007660148	81.05	0.010601654	17,036.31	0.003587723
625	03-Jul-06	9,140.51	-0.015170964	11,682.16	-0.010851484	79.75	-0.016164674	16,869.72	-0.009826576
626	04-Jul-06	9,075.52	-0.007135713	11,624.78	-0.004923665	79.19	-0.007044595	16,734.39	-0.008054182
627	05-Jul-06	9,083.72	0.000903861	11,651.20	0.002269971	79.20	0.000127975	16,780.50	0.002751578
628	06-Jul-06	9,164.53	0.008856688	11,669.53	0.001571450	79.36	0.002011152	16,821.67	0.002450272
629	07-Jul-06	9,084.94	-0.008722721	11,601.37	-0.005857783	78.89	-0.005974323	16,677.32	-0.008617801
630	10-Jul-06	9,038.44	-0.005132067	11,559.79	-0.003590464	79.48	0.007458364	16,710.11	0.001963708
631	11-Jul-06	9,050.35	0.001317721	11,519.89	-0.003457407	79.28	-0.002479355	16,677.33	-0.001963237
632	12-Jul-06	9,040.30	-0.001111848	11,539.76	0.001723523	79.04	-0.003075765	16,682.97	0.000338279
633	13-Jul-06	9,089.47	0.005424067	11,556.45	0.001445246	78.77	-0.003362458	16,686.10	0.000187506
634	14-Jul-06	9,215.29	0.013748456	11,697.95	0.012169946	79.53	0.009635620	16,970.07	0.016874909
635	17-Jul-06	9,275.54	0.006515857	11,713.76	0.001350050	79.66	0.001640216	17,033.50	0.003731132
636	18-Jul-06	9,260.35	-0.001638864	11,598.66	-0.009874211	79.20	-0.005886556	16,851.31	-0.010753744
637	19-Jul-06	9,244.40	-0.001723926	11,551.23	-0.004097615	78.73	-0.005916312	16,874.08	0.001350281
638	20-Jul-06	9,157.33	-0.009462593	11,544.80	-0.000557252	78.53	-0.002564869	16,882.99	0.000527762
639	21-Jul-06	9,152.54	-0.000523320	11,566.87	0.001910484	78.33	-0.002485602	16,912.45	0.001743702
640	24-Jul-06	9,177.43	0.002715055	11,605.79	0.003358753	78.83	0.006294839	17,003.70	0.005380657
641	25-Jul-06	9,124.45	-0.005788641	11,554.18	-0.004456986	78.24	-0.007504340	16,892.75	-0.006546250
642	26-Jul-06	9,130.84	0.000699301	11,478.46	-0.006574623	77.97	-0.003413584	16,809.55	-0.004937667
643	27-Jul-06	9,083.39	-0.005210155	11,568.82	0.007841387	78.26	0.003640599	16,870.73	0.003633270
644	28-Jul-06	9,084.59	0.000132333	11,531.55	-0.003227457	78.69	0.005525845	16,882.77	0.000713230
645	31-Jul-06	9,070.25	-0.001579395	11,576.67	0.003905122	79.35	0.008320969	16,912.59	0.001764714
646	01-Aug-06	9,090.43	0.002222293	11,575.43	-0.000106492	79.31	-0.000412085	16,946.01	0.001973923
647	02-Aug-06	9,100.63	0.001120677	11,667.78	0.007946175	79.54	0.002843686	17,075.08	0.007587925
648	03-Aug-06	9,120.42	0.002172565	11,636.61	-0.002675395	79.45	-0.001095384	17,099.39	0.001422526
649	04-Aug-06	9,103.44	-0.001863451	11,655.46	0.001619061	79.07	-0.004861204	17,182.85	0.004869458
650	08-Aug-06	9,077.43	-0.002861406	11,638.90	-0.001421741	78.80	-0.003396670	17,296.82	0.006610868
651	09-Aug-06	9,106.62	0.003211236	11,666.95	0.002406738	78.93	0.001679390	17,317.44	0.001191197
652	10-Aug-06	9,074.15	-0.003572814	11,685.62	0.001598993	78.79	-0.001780607	17,271.38	-0.002663363
653	11-Aug-06	9,069.62	-0.000499354	11,591.55	-0.008082392	78.51	-0.003593424	17,180.18	-0.005294213
654	14-Aug-06	9,094.46	0.002735776	11,592.76	0.000104126	78.14	-0.004742286	17,217.56	0.002173428
655	15-Aug-06	9,092.82	-0.000180160	11,587.25	-0.000475440	78.06	-0.000984452	17,204.78	-0.000742520
656	16-Aug-06	9,098.29	0.000600440	11,637.09	0.004292550	78.38	0.004042411	17,233.52	0.001668600
657	17-Aug-06	9,093.04	-0.000576552	11,686.48	0.004235257	78.64	0.003394793	17,250.93	0.001009844
658	18-Aug-06	9,074.78	-0.002010321	11,648.11	-0.003289026	78.32	-0.004071850	17,121.25	-0.007545521
659	21-Aug-06	9,065.42	-0.001031886	11,668.93	0.001785401	78.39	0.000912320	17,097.82	-0.001369669
660	22-Aug-06	9,075.87	0.001152329	11,679.05	0.000867593	78.18	-0.002780776	17,173.37	0.004409413
661	23-Aug-06	9,073.39	-0.000273117	11,606.04	-0.006271746	77.96	-0.002761434	17,127.66	-0.002665432
662	24-Aug-06	9,125.53	0.005729006	11,655.21	0.004227803	78.41	0.005695885	17,254.22	0.007362102
663	25-Aug-06	9,139.93	0.001576873	11,668.91	0.001174595	78.18	-0.002928920	17,245.66	-0.000496401
664	28-Aug-06	9,137.89	-0.000223306	11,693.66	0.002118939	78.01	-0.002143243	17,278.17	0.001883218
665	29-Aug-06	9,094.84	-0.004721302	11,661.90	-0.002719394	77.87	-0.001767046	17,272.05	-0.000354132
666	30-Aug-06	9,084.35	-0.001154568	11,660.21	-0.000144807	77.71	-0.002052738	17,260.72	-0.000656188
667	31-Aug-06	9,097.94	0.001495030	11,668.07	0.000673498	77.53	-0.002347444	17,325.84	0.003765909
668	01-Sep-06	9,078.43	-0.002146760	11,633.17	-0.002995732	77.41	-0.001590780	17,284.72	-0.002376382
669	04-Sep-06	9,079.70	0.000139605	11,673.90	0.003495313	77.94	0.006839314	17,318.64	0.001960762
670	05-Sep-06	9,079.34	-0.000039486	11,653.33	-0.001763193	78.31	0.004709558	17,281.27	-0.002160572

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		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
671	06-Sep-06	9,077.30	-0.000224365	11,630.82	-0.001934186	78.00	-0.003889182	17,192.51	-0.005149356
672	07-Sep-06	9,090.55	0.001458593	11,646.61	0.001356772	77.90	-0.001371250	17,122.14	-0.004101096
673	08-Sep-06	9,101.24	0.001175163	11,573.11	-0.006330610	78.31	0.005332615	17,053.00	-0.004046602
674	11-Sep-06	9,126.56	0.002778140	11,580.63	0.000650006	78.08	-0.002940592	17,034.74	-0.001071182
675	12-Sep-06	9,140.31	0.001505621	11,621.90	0.003556626	77.74	-0.004424988	17,077.95	0.002533654
676	13-Sep-06	9,150.13	0.001073016	11,608.92	-0.001116805	77.60	-0.001793721	17,142.50	0.003772386
677	14-Sep-06	9,115.10	-0.003834988	11,565.09	-0.003783397	77.54	-0.000734374	17,099.35	-0.002520289
678	15-Sep-06	9,137.57	0.002461341	11,635.51	0.006070630	77.78	0.003012664	17,248.44	0.008681165
679	18-Sep-06	9,138.64	0.000117679	11,566.29	-0.005966869	77.43	-0.004450698	17,183.20	-0.003789266
680	19-Sep-06	9,147.58	0.000978100	11,626.85	0.005222702	77.55	0.001512956	17,204.38	0.001231676
681	20-Sep-06	9,165.45	0.001950974	11,616.98	-0.000849459	78.14	0.007555666	17,264.08	0.003463965
682	21-Sep-06	9,138.36	-0.002959446	11,621.85	0.000419166	78.05	-0.001125128	17,291.82	0.001605680
683	22-Sep-06	9,177.36	0.004257938	11,739.13	0.010040905	78.84	0.010146120	17,456.60	0.009484289
684	25-Sep-06	9,194.36	0.001851292	11,777.93	0.003299626	79.04	0.002491547	17,508.86	0.002989065
685	26-Sep-06	9,234.44	0.004349057	11,781.01	0.000261297	79.25	0.002707506	17,561.71	0.003014044
686	27-Sep-06	9,199.41	-0.003799884	11,671.46	-0.009342538	78.60	-0.008260320	17,426.19	-0.007746748
687	28-Sep-06	9,213.54	0.001534699	11,723.20	0.004423841	78.38	-0.002880507	17,384.31	-0.002406542
688	29-Sep-06	9,229.95	0.001778782	11,719.57	-0.000309685	78.30	-0.000931269	17,298.92	-0.004923615
689	03-Oct-06	9,196.20	-0.003662716	11,731.79	0.001041659	78.15	-0.001906613	17,359.25	0.003481441
690	04-Oct-06	9,217.43	0.002305326	11,727.97	-0.000325132	78.10	-0.000669015	17,367.62	0.000481947
691	05-Oct-06	9,218.71	0.000139046	11,710.93	-0.001454258	78.41	0.003950820	17,384.38	0.000964614
692	06-Oct-06	9,206.39	-0.001336903	11,679.73	-0.002667912	78.02	-0.004943645	17,282.58	-0.005873090
693	09-Oct-06	9,224.76	0.001993650	11,622.86	-0.004880871	77.35	-0.008678026	17,251.45	-0.001803093
694	10-Oct-06	9,224.27	-0.000054124	11,619.61	-0.000279482	77.45	0.001302241	17,212.62	-0.002253083
695	11-Oct-06	9,220.01	-0.000461329	11,567.40	-0.004503196	77.13	-0.004165415	17,110.06	-0.005976514
696	12-Oct-06	9,219.54	-0.000050534	11,557.31	-0.000873104	77.11	-0.000202418	17,119.07	0.000526334
697	13-Oct-06	9,203.73	-0.001717012	11,570.14	0.001109417	77.12	0.000046833	17,130.11	0.000645046
698	16-Oct-06	9,202.77	-0.000103811	11,510.76	-0.005145556	76.95	-0.002195092	17,069.73	-0.003530931
699	17-Oct-06	9,154.63	-0.005244979	11,478.65	-0.002792979	76.93	-0.000245272	17,055.05	-0.000860653
700	18-Oct-06	9,156.95	0.000252839	11,494.18	0.001351635	77.27	0.004430896	17,141.44	0.005052639
701	19-Oct-06	9,159.27	0.000254260	11,480.25	-0.001212142	77.06	-0.002683611	17,111.06	-0.001774064
702	20-Oct-06	9,169.41	0.001105864	11,579.12	0.008575315	77.49	0.005467364	17,212.75	0.005925586
703	23-Oct-06	9,160.64	-0.000957141	11,549.18	-0.002589329	77.09	-0.005091734	17,235.15	0.001300418
704	24-Oct-06	9,165.46	0.000525968	11,487.92	-0.005318483	76.72	-0.004823944	17,134.04	-0.005883632
705	25-Oct-06	9,130.32	-0.003840856	11,472.43	-0.001348826	76.57	-0.002014727	17,109.80	-0.001415896
706	26-Oct-06	9,108.43	-0.002400382	11,501.66	0.002543953	76.61	0.000560261	17,127.71	0.001046449
707	27-Oct-06	9,093.53	-0.001637780	11,550.09	0.004202356	76.80	0.002485481	17,199.41	0.004177124
708	30-Oct-06	9,101.07	0.000828821	11,585.91	0.003096388	77.53	0.009396004	17,268.92	0.004033372
709	31-Oct-06	9,114.66	0.001493147	11,586.51	0.000052153	77.56	0.000492132	17,311.11	0.002440323
710	01-Nov-06	9,098.07	-0.001821791	11,611.15	0.002123761	77.80	0.003053652	17,350.91	0.002296501
711	02-Nov-06	9,108.92	0.001191743	11,619.03	0.000678783	77.69	-0.001468285	17,374.01	0.001330461
712	03-Nov-06	9,114.04	0.000561355	11,645.21	0.002250892	77.81	0.001530605	17,390.34	0.000939365
713	06-Nov-06	9,129.76	0.001723175	11,600.92	-0.003810554	77.32	-0.006288233	17,351.27	-0.002249107
714	07-Nov-06	9,126.16	-0.000393705	11,652.09	0.004400603	77.53	0.002751980	17,389.16	0.002181394
715	08-Nov-06	9,110.94	-0.001669683	11,642.93	-0.000786407	77.46	-0.000958376	17,370.89	-0.001051238
716	09-Nov-06	9,122.21	0.001236623	11,646.96	0.000346309	77.41	-0.000606424	17,376.40	0.000316888
717	10-Nov-06	9,115.54	-0.000731686	11,719.98	0.006249793	77.56	0.001900806	17,407.96	0.001814764
718	13-Nov-06	9,125.51	0.001092601	11,746.35	0.002247594	77.82	0.003345971	17,465.70	0.003311498
719	14-Nov-06	9,127.65	0.000234855	11,707.77	-0.003290182	77.61	-0.002623145	17,386.65	-0.004536599
720	15-Nov-06	9,139.01	0.001244216	11,711.03	0.000278907	77.62	0.000068239	17,322.93	-0.003671301
721	16-Nov-06	9,172.65	0.003673675	11,767.96	0.004848840	77.81	0.002521324	17,329.88	0.000401094
722	17-Nov-06	9,172.76	0.000011769	11,718.62	-0.004201217	77.48	-0.004276174	17,302.49	-0.001582093
723	20-Nov-06	9,150.51	-0.002427721	11,750.75	0.002738207	77.60	0.001561275	17,333.66	0.001800204
724	21-Nov-06	9,144.90	-0.000613768	11,714.67	-0.003075638	77.41	-0.002547980	17,345.33	0.000672866
725	22-Nov-06	9,140.01	-0.000535033	11,761.67	0.004004076	77.77	0.004709821	17,394.63	0.002838089
726	23-Nov-06	9,127.63	-0.001355227	11,809.98	0.004099702	78.27	0.006350606	17,477.14	0.004732604

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
727	24-Nov-06	9,148.50	0.002283592	11,853.90	0.003711149	78.63	0.004646337	17,525.95	0.002788783
728	27-Nov-06	9,142.93	-0.000608647	12,004.72	0.012643147	78.88	0.003151036	17,721.96	0.011121804
729	28-Nov-06	9,170.31	0.002989667	12,044.53	0.003311327	79.04	0.002073408	17,774.46	0.002957982
730	29-Nov-06	9,157.83	-0.001361645	12,078.21	0.002791743	79.09	0.000650261	17,874.78	0.005628364
731	30-Nov-06	9,165.61	0.000848926	12,072.15	-0.000501772	78.89	-0.002561963	17,862.46	-0.000689420
732	01-Dec-06	9,142.60	-0.002512672	12,114.45	0.003497898	78.98	0.001139517	17,980.07	0.006562726
733	04-Dec-06	9,169.84	0.002975142	12,213.00	0.008102413	79.24	0.003224870	18,136.79	0.008678096
734	05-Dec-06	9,143.29	-0.002899844	12,185.39	-0.002263927	79.23	-0.000039403	18,077.79	-0.003258072
735	06-Dec-06	9,098.41	-0.004920558	12,123.52	-0.005090014	79.31	0.000971303	17,952.89	-0.006932880
736	07-Dec-06	9,101.51	0.000340150	12,111.30	-0.001008547	79.19	-0.001496933	17,910.22	-0.002379581
737	08-Dec-06	9,067.53	-0.003740418	12,048.82	-0.005171917	78.72	-0.006019899	17,799.05	-0.006226384
738	11-Dec-06	9,105.09	0.004133700	11,977.80	-0.005911905	78.02	-0.008854020	17,751.74	-0.002661556
739	12-Dec-06	9,070.42	-0.003814948	12,028.03	0.004184895	77.67	-0.004559319	17,794.15	0.002386190
740	13-Dec-06	9,072.22	0.000198244	12,049.90	0.001816418	77.58	-0.001174123	17,883.41	0.005003613
741	14-Dec-06	9,075.42	0.000352577	11,993.28	-0.004709997	77.19	-0.005039000	17,844.46	-0.002180452
742	15-Dec-06	9,077.89	0.000272203	11,935.43	-0.004835012	77.02	-0.002197580	17,802.86	-0.002334080
743	18-Dec-06	9,077.42	-0.000051993	11,884.74	-0.004256216	76.87	-0.001864934	17,739.43	-0.003568959
744	19-Dec-06	9,127.48	0.005500419	11,945.00	0.005058021	77.36	0.006281083	17,783.33	0.002471102
745	20-Dec-06	9,097.86	-0.003250757	12,034.38	0.007454821	77.03	-0.004250821	17,953.23	0.009508882
746	21-Dec-06	9,105.60	0.000850238	12,012.42	-0.001826745	76.90	-0.001713184	17,905.93	-0.002638191
747	22-Dec-06	9,075.30	-0.003333068	11,973.49	-0.003246475	76.74	-0.002111166	17,819.68	-0.004828430
748	27-Dec-06	9,045.19	-0.003322734	11,879.28	-0.007898586	76.19	-0.007113132	17,713.79	-0.005960215
749	28-Dec-06	9,030.13	-0.001667279	11,847.90	-0.002645558	76.03	-0.002176216	17,676.04	-0.002133285
750	29-Dec-06	9,005.43	-0.002738120	11,852.96	0.000427170	75.70	-0.004265225	17,682.38	0.000358801
751	02-Jan-07	8,954.53	-0.005668826	11,854.26	0.000109647	75.41	-0.003874680	17,600.89	-0.004619241
752	03-Jan-07	8,967.90	0.001491694	11,914.36	0.005057217	75.53	0.001550841	17,704.88	0.005890620
753	04-Jan-07	8,979.64	0.001309125	11,824.84	-0.007541995	75.21	-0.004231807	17,522.82	-0.010335984
754	05-Jan-07	9,007.93	0.003144721	11,772.77	-0.004413724	76.12	0.012085382	17,440.59	-0.004703699
755	08-Jan-07	9,048.60	0.004504708	11,761.67	-0.000943178	76.43	0.004047919	17,454.86	0.000817653
756	09-Jan-07	9,016.60	-0.003541970	11,758.83	-0.000241425	75.81	-0.008202231	17,514.26	0.003397526
757	10-Jan-07	9,066.43	0.005510648	11,761.77	0.000250218	76.03	0.002919834	17,556.49	0.002408231
758	11-Jan-07	9,064.54	-0.000208544	11,743.38	-0.001564986	75.71	-0.004251597	17,522.23	-0.001953348
759	12-Jan-07	9,161.54	0.010644380	11,819.38	0.006451493	76.00	0.003821957	17,829.34	0.017374946
760	15-Jan-07	9,117.87	-0.004777709	11,794.83	-0.002079693	75.81	-0.002398164	17,871.76	0.002376128
761	16-Jan-07	9,103.45	-0.001583136	11,781.82	-0.001103753	75.59	-0.002991215	17,887.08	0.000856854
762	17-Jan-07	9,082.44	-0.002310392	11,740.35	-0.003525908	75.22	-0.004826391	17,814.77	-0.004050669
763	18-Jan-07	9,091.60	0.001008152	11,792.00	0.004389956	75.24	0.000224488	17,937.42	0.006861331
764	19-Jan-07	9,080.45	-0.001227807	11,803.68	0.000990043	74.89	-0.004676293	17,943.01	0.000311728
765	22-Jan-07	9,088.49	0.000885796	11,790.11	-0.001150275	74.90	0.000104324	17,947.50	0.000249969
766	23-Jan-07	9,098.75	0.001127480	11,776.87	-0.001124203	74.78	-0.001598855	17,999.00	0.002865204
767	24-Jan-07	9,078.85	-0.002189339	11,832.39	0.004703655	74.67	-0.001460814	18,001.52	0.000140045
768	25-Jan-07	9,094.41	0.001712489	11,787.20	-0.003826694	75.55	0.011671618	17,881.46	-0.006691500
769	29-Jan-07	9,123.92	0.003239645	11,774.22	-0.001101651	74.91	-0.008457814	17,871.42	-0.000561512
770	30-Jan-07	9,111.48	-0.001363620	11,812.54	0.003249408	74.80	-0.001419463	17,885.25	0.000773288
771	31-Jan-07	9,093.26	-0.002001730	11,784.46	-0.002380529	74.81	0.000061713	17,848.97	-0.002030537
772	01-Feb-07	9,095.60	0.000256896	11,854.72	0.005944507	75.33	0.006932063	17,866.19	0.000964485
773	02-Feb-07	9,072.45	-0.002549043	11,814.35	-0.003410662	75.15	-0.002372954	17,853.87	-0.000690030
774	05-Feb-07	9,085.74	0.001463961	11,755.06	-0.005031280	75.21	0.000780976	17,850.61	-0.000182604
775	06-Feb-07	9,055.36	-0.003348695	11,704.75	-0.004288796	75.29	0.001075956	17,755.57	-0.005338578
776	07-Feb-07	9,046.33	-0.000997690	11,750.25	0.003879500	75.29	-0.000006594	17,826.53	0.003988597
777	08-Feb-07	9,053.10	0.000748196	11,789.70	0.003351834	74.93	-0.004766932	17,857.14	0.001715902
778	09-Feb-07	9,049.45	-0.000403685	11,800.87	0.000946732	74.57	-0.004833805	17,726.47	-0.007344344
779	12-Feb-07	9,054.14	0.000518375	11,786.38	-0.001228935	74.23	-0.004612147	17,681.05	-0.002565816
780	13-Feb-07	9,069.86	0.001734313	11,753.56	-0.002787831	74.70	0.006307458	17,673.30	-0.000438132
781	14-Feb-07	9,067.95	-0.000210497	11,817.88	0.005457090	74.81	0.001585659	17,651.61	-0.001228316
782	15-Feb-07	9,048.35	-0.002163877	11,885.05	0.005668140	75.31	0.006532671	17,763.59	0.006323668

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		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
783	16-Feb-07	9,049.20	0.000093829	11,888.81	0.000316385	75.75	0.005882112	17,674.88	-0.005006125
784	19-Feb-07	9,057.78	0.000947782	11,916.14	0.002295589	75.80	0.000697381	17,695.36	0.001157990
785	20-Feb-07	9,068.26	0.001156573	11,949.75	0.002816666	75.72	-0.001134243	17,715.42	0.001132986
786	21-Feb-07	9,067.70	-0.000061765	11,916.21	-0.002810792	75.66	-0.000784158	17,714.64	-0.000044071
787	22-Feb-07	9,074.59	0.000759485	11,913.69	-0.000211054	74.97	-0.009070847	17,719.08	0.000250694
788	23-Feb-07	9,085.49	0.001200487	11,924.42	0.000900118	74.76	-0.002822785	17,769.78	0.002857375
789	26-Feb-07	9,068.06	-0.001919784	11,954.39	0.002509761	74.98	0.002927342	17,801.19	0.001765806
790	27-Feb-07	9,070.53	0.000271776	11,957.50	0.000260098	75.31	0.004383021	17,809.10	0.000444254
791	28-Feb-07	9,176.40	0.011603945	12,134.59	0.014701366	77.46	0.028149282	18,018.94	0.011713784
792	01-Mar-07	9,155.22	-0.002310726	12,106.33	-0.002331649	77.43	-0.000342675	17,963.06	-0.003106169
793	02-Mar-07	9,177.07	0.002384186	12,087.25	-0.001577062	77.99	0.007155382	17,956.13	-0.000385522
794	05-Mar-07	9,214.73	0.004094986	12,113.72	0.002188054	79.64	0.020920988	17,801.54	-0.008646573
795	06-Mar-07	9,207.81	-0.000751411	12,064.00	-0.004113057	79.08	-0.007065603	17,732.70	-0.003874525
796	07-Mar-07	9,205.41	-0.000260329	12,086.57	0.001869233	79.11	0.000452019	17,750.19	0.000985456
797	08-Mar-07	9,212.66	0.000787305	12,139.35	0.004356615	79.11	-0.000062765	17,791.30	0.002313810
798	09-Mar-07	9,178.54	-0.003710460	12,073.27	-0.005457661	78.26	-0.010743805	17,731.22	-0.003383034
799	12-Mar-07	9,169.44	-0.000991921	12,023.83	-0.004103750	77.53	-0.009470354	17,730.76	-0.000025816
800	13-Mar-07	9,190.63	0.002308737	12,119.48	0.007923862	78.23	0.009006464	17,757.56	0.001510421
801	14-Mar-07	9,219.95	0.003184595	12,164.67	0.003721527	79.41	0.015048684	17,767.37	0.000552414
802	15-Mar-07	9,211.40	-0.000928012	12,183.71	0.001564335	78.59	-0.010440077	17,819.88	0.002950991
803	16-Mar-07	9,218.43	0.000763735	12,252.06	0.005593539	78.73	0.001839553	17,859.59	0.002225771
804	19-Mar-07	9,224.48	0.000656113	12,272.58	0.001673382	78.64	-0.001151134	17,913.11	0.002992123
805	20-Mar-07	9,185.87	-0.004194702	12,207.06	-0.005352870	77.95	-0.008792561	17,861.67	-0.002875844
806	21-Mar-07	9,138.62	-0.005157366	12,169.65	-0.003068713	77.91	-0.000515424	17,924.21	0.003495211
807	22-Mar-07	9,096.89	-0.004577074	12,179.04	0.000770909	77.42	-0.006400623	17,902.83	-0.001193141
808	23-Mar-07	9,131.08	0.003752061	12,164.71	-0.001177325	77.23	-0.002448245	17,923.98	0.001180377
809	26-Mar-07	9,112.60	-0.002025895	12,093.02	-0.005910423	77.27	0.000518711	17,887.29	-0.002048910
810	27-Mar-07	9,108.78	-0.000419976	12,140.03	0.003879804	77.13	-0.001793000	17,929.44	0.002353695
811	28-Mar-07	9,132.81	0.002635218	12,190.71	0.004165941	77.85	0.009346439	17,929.27	-0.000009599
812	29-Mar-07	9,130.11	-0.000295682	12,164.44	-0.002157677	77.95	0.001251403	17,931.37	0.000117224
813	30-Mar-07	9,130.11	0.000000000	12,180.53	0.001321659	77.61	-0.004433661	17,922.65	-0.000486618
814	02-Apr-07	9,108.00	-0.002424923	12,158.44	-0.001814961	77.38	-0.002928655	17,931.79	0.000509763
815	03-Apr-07	9,122.05	0.001541907	12,182.68	0.001992043	77.18	-0.002530244	18,040.31	0.006033897
816	04-Apr-07	9,105.91	-0.001771094	12,145.20	-0.003081172	76.61	-0.007420056	17,977.15	-0.003507480
817	05-Apr-07	9,108.61	0.000296080	12,169.15	0.001969540	76.74	0.001621970	17,990.33	0.000732931
818	10-Apr-07	9,102.39	-0.000682555	12,213.17	0.003610856	76.46	-0.003611015	17,923.94	-0.003696855
819	11-Apr-07	9,104.91	0.000276731	12,228.38	0.001244420	76.37	-0.001221295	18,002.40	0.004367635
820	12-Apr-07	9,105.02	0.000011922	12,257.96	0.002416306	76.25	-0.001594706	17,991.85	-0.000585966
821	13-Apr-07	9,107.40	0.000261324	12,306.82	0.003977977	76.70	0.005925550	18,067.21	0.004179509
822	16-Apr-07	9,098.02	-0.001030974	12,322.85	0.001302145	76.18	-0.006856660	18,089.43	0.001229320
823	17-Apr-07	9,089.27	-0.000961654	12,308.82	-0.001139601	76.12	-0.000704615	18,102.42	0.000717618
824	18-Apr-07	9,072.10	-0.001890539	12,326.56	0.001440613	76.41	0.003809934	18,229.22	0.006980165
825	19-Apr-07	9,103.58	0.003463703	12,375.04	0.003925019	77.20	0.010198930	18,246.63	0.000954682
826	20-Apr-07	9,094.94	-0.000949485	12,380.87	0.000471309	76.64	-0.007172904	18,211.71	-0.001915297
827	23-Apr-07	9,090.36	-0.000503365	12,345.38	-0.002871207	76.79	0.001860036	18,202.54	-0.000503653
828	24-Apr-07	9,094.55	0.000459845	12,338.43	-0.000562833	76.80	0.000123924	18,171.47	-0.001708567
829	26-Apr-07	9,074.65	-0.002189807	12,386.96	0.003925378	76.47	-0.004304919	18,197.35	0.001423335
830	27-Apr-07	9,080.00	0.000589166	12,343.05	-0.003550709	75.94	-0.006871022	18,072.38	-0.006891517
831	30-Apr-07	9,083.21	0.000353724	12,384.56	0.003357364	75.98	0.000507644	18,122.59	0.002774449
832	01-May-07	9,083.45	0.000026592	12,398.35	0.001112804	75.98	-0.000004594	18,171.29	0.002683861
833	02-May-07	9,079.67	-0.000417175	12,340.15	-0.004705944	75.91	-0.000903610	18,121.97	-0.002717634
834	03-May-07	9,047.91	-0.003503783	12,312.26	-0.002262033	75.28	-0.008398907	18,014.97	-0.005922078
835	04-May-07	9,018.32	-0.003276040	12,228.48	-0.006828340	74.96	-0.004200727	17,922.83	-0.005127646
836	07-May-07	8,884.44	-0.014955761	12,088.76	-0.011490952	74.08	-0.011869437	17,740.92	-0.010201716
837	08-May-07	8,904.54	0.002259322	12,126.23	0.003094389	74.28	0.002757362	17,768.44	0.001549796
838	09-May-07	8,853.25	-0.005776480	11,992.81	-0.011063297	73.92	-0.004949527	17,623.62	-0.008183602

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		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
839	10-May-07	8,768.47	-0.009621928	11,878.26	-0.009598102	73.02	-0.012133313	17,497.00	-0.007210419
840	11-May-07	8,839.90	0.008112765	11,916.21	0.003189934	73.75	0.009878350	17,500.60	0.000205335
841	14-May-07	8,804.90	-0.003967544	11,925.89	0.000812282	73.26	-0.006711098	17,467.27	-0.001906124
842	15-May-07	8,823.11	0.002066026	11,946.34	0.001713427	73.32	0.000926295	17,463.75	-0.000201472
843	16-May-07	8,805.09	-0.002043737	11,980.39	0.002846249	73.17	-0.002143532	17,494.63	0.001766699
844	17-May-07	8,804.80	-0.000033677	11,909.91	-0.005900507	72.88	-0.003954049	17,415.57	-0.004529486
845	18-May-07	8,807.41	0.000296517	11,875.82	-0.002866310	72.60	-0.003748602	17,383.99	-0.001815100
846	21-May-07	8,765.49	-0.004770355	11,845.65	-0.002543915	72.28	-0.004522491	17,299.76	-0.004856829
847	22-May-07	8,707.56	-0.006631334	11,725.66	-0.010180674	71.67	-0.008412530	17,166.51	-0.007732438
848	23-May-07	8,689.46	-0.002080282	11,696.97	-0.002450112	71.42	-0.003560032	17,161.74	-0.000277716
849	24-May-07	8,710.50	0.002418233	11,722.28	0.002161219	71.64	0.003134409	17,307.41	0.008452460
850	25-May-07	8,754.73	0.005064412	11,753.73	0.002679205	72.21	0.007951628	17,384.35	0.004435693
851	28-May-07	8,714.60	-0.004593955	11,724.42	-0.002496293	71.63	-0.008160698	17,285.71	-0.005690242
852	29-May-07	8,770.49	0.006393148	11,785.30	0.005179334	72.23	0.008416274	17,413.16	0.007346129
853	30-May-07	8,815.34	0.005100449	11,850.27	0.005497455	72.51	0.003894077	17,460.09	0.002691013
854	31-May-07	8,829.45	0.001599589	11,860.84	0.000891832	72.64	0.001707173	17,443.09	-0.000974156
855	01-Jun-07	8,827.00	-0.000277236	11,870.95	0.000851412	72.39	-0.003446555	17,470.77	0.001585857
856	04-Jun-07	8,774.75	-0.005937292	11,806.88	-0.005411666	71.92	-0.006494391	17,405.38	-0.003749904
857	05-Jun-07	8,805.36	0.003482542	11,881.76	0.006322470	72.27	0.004819879	17,543.52	0.007905597
858	06-Jun-07	8,858.46	0.006012422	11,983.64	0.008537892	73.01	0.010293774	17,666.67	0.006994693
859	07-Jun-07	8,889.68	0.003517288	12,008.94	0.002108347	73.34	0.004432634	17,724.92	0.003291797
860	08-Jun-07	9,064.58	0.019483581	12,172.80	0.013553276	74.79	0.019590334	17,933.30	0.011688011
861	12-Jun-07	9,030.23	-0.003796256	12,067.49	-0.008689189	74.21	-0.007766310	17,817.54	-0.006475850
862	13-Jun-07	9,064.43	0.003780189	12,066.78	-0.000058653	74.22	0.000075926	17,899.06	0.004564673
863	14-Jun-07	9,049.61	-0.001636883	12,046.03	-0.001721158	73.69	-0.007162863	17,843.87	-0.003087948
864	15-Jun-07	9,079.83	0.003333966	12,094.87	0.004046457	73.82	0.001767975	17,886.06	0.002361557
865	18-Jun-07	8,972.47	-0.011893938	12,012.71	-0.006816616	72.59	-0.016724384	17,755.34	-0.007335456
866	19-Jun-07	8,915.49	-0.006370945	11,977.71	-0.002917958	72.12	-0.006550827	17,702.99	-0.002952916
867	20-Jun-07	8,905.29	-0.001144819	11,954.66	-0.001925949	72.20	0.001181357	17,706.03	0.000172009
868	21-Jun-07	8,978.48	0.008185277	12,031.05	0.006369748	72.59	0.005377257	17,885.07	0.010060690
869	22-Jun-07	8,993.15	0.001632796	12,051.57	0.001703635	72.59	-0.000053510	17,931.28	0.002580368
870	25-Jun-07	9,010.37	0.001912255	12,126.21	0.006174534	72.74	0.002085578	18,016.49	0.004740890
871	26-Jun-07	9,051.22	0.004523189	12,188.15	0.005094663	73.36	0.008499809	18,085.36	0.003815169
872	27-Jun-07	9,109.61	0.006430331	12,239.26	0.004184924	74.25	0.012083509	18,193.26	0.005948433
873	28-Jun-07	9,069.96	-0.004361445	12,209.79	-0.002410988	73.66	-0.007977106	18,146.39	-0.002579527
874	29-Jun-07	9,034.99	-0.003862605	12,150.21	-0.004890964	73.24	-0.005800886	18,101.98	-0.002450033
875	02-Jul-07	9,000.23	-0.003854714	12,183.09	0.002701937	73.16	-0.001046702	18,093.78	-0.000453288
876	03-Jul-07	8,998.48	-0.000194665	12,255.96	0.005963787	73.45	0.003899147	18,151.64	0.003192517
877	04-Jul-07	9,019.58	0.002342365	12,284.85	0.002354486	73.71	0.003530268	18,213.28	0.003390105
878	05-Jul-07	9,017.60	-0.000220430	12,276.69	-0.000664347	73.50	-0.002819632	18,177.12	-0.001987162
879	06-Jul-07	9,029.43	0.001311613	12,265.59	-0.000905036	73.27	-0.003182077	18,143.63	-0.001844224
880	09-Jul-07	9,025.72	-0.000410717	12,294.28	0.002336202	72.99	-0.003735427	18,155.00	0.000626502
881	10-Jul-07	9,005.36	-0.002258410	12,252.90	-0.003371533	72.95	-0.000516861	18,133.36	-0.001192349
882	11-Jul-07	9,025.21	0.002201620	12,414.90	0.013134715	74.47	0.020560073	18,299.18	0.009102413
883	12-Jul-07	9,029.75	0.000502316	12,423.66	0.000705818	73.85	-0.008395071	18,349.47	0.002744617
884	13-Jul-07	9,010.49	-0.002134333	12,415.38	-0.000666604	73.62	-0.003031942	18,280.30	-0.003776672
885	16-Jul-07	9,025.20	0.001630734	12,445.11	0.002391682	74.02	0.005401062	18,374.53	0.005141712
886	17-Jul-07	9,054.70	0.003263641	12,481.46	0.002916776	74.26	0.003146690	18,442.89	0.003713293
887	18-Jul-07	9,062.32	0.000841019	12,518.10	0.002930844	74.43	0.002295568	18,605.85	0.008796983
888	19-Jul-07	9,105.52	0.004754902	12,556.57	0.003068387	74.65	0.002958089	18,679.29	0.003939453
889	20-Jul-07	9,067.58	-0.004175388	12,514.11	-0.003387356	74.19	-0.006186858	18,580.40	-0.005307864
890	23-Jul-07	9,084.63	0.001878723	12,574.88	0.004844517	75.15	0.012865816	18,718.49	0.007404139
891	24-Jul-07	9,049.18	-0.003909431	12,508.20	-0.005316270	75.01	-0.001872309	18,679.11	-0.002105709
892	25-Jul-07	9,072.97	0.002625171	12,533.10	0.001988750	75.45	0.005953127	18,700.60	0.001149885
893	26-Jul-07	9,098.00	0.002755182	12,484.88	-0.003855484	75.55	0.001247690	18,653.53	-0.002520214
894	27-Jul-07	9,215.57	0.012840309	12,654.16	0.013467612	77.67	0.027675515	18,835.68	0.009717355

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
895	30-Jul-07	9,227.60	0.001304062	12,589.56	-0.005117900	77.88	0.002702810	18,668.41	-0.008920004
896	31-Jul-07	9,185.72	-0.004548698	12,582.29	-0.000577118	77.29	-0.007536982	18,619.06	-0.002647253
897	01-Aug-07	9,299.74	0.012336210	12,697.03	0.009077343	78.93	0.020909764	18,808.61	0.010129146
898	02-Aug-07	9,321.24	0.002309302	12,735.85	0.003052794	78.48	-0.005681794	18,928.23	0.006339687
899	03-Aug-07	9,274.89	-0.004985052	12,711.30	-0.001929751	77.88	-0.007710523	18,884.41	-0.002318090
900	07-Aug-07	9,304.68	0.003207051	12,844.05	0.010389756	78.40	0.006687506	18,904.40	0.001058298
901	08-Aug-07	9,320.49	0.001697523	12,813.80	-0.002357741	78.35	-0.000653175	18,841.16	-0.003350867
902	09-Aug-07	9,284.06	-0.003915788	12,818.88	0.000395852	77.60	-0.009625248	18,926.55	0.004521990
903	10-Aug-07	9,350.77	0.007159548	12,778.68	-0.003140694	79.29	0.021563769	18,890.22	-0.001921385
904	13-Aug-07	9,345.90	-0.000520772	12,790.32	0.000910638	79.05	-0.003071043	18,894.45	0.000223637
905	14-Aug-07	9,366.88	0.002241546	12,755.32	-0.002740599	79.46	0.005183756	18,839.33	-0.002921516
906	15-Aug-07	9,397.85	0.003301383	12,673.72	-0.006417800	80.20	0.009268016	18,694.19	-0.007733791
907	16-Aug-07	9,484.92	0.009222005	12,732.42	0.004621258	81.66	0.018102933	18,822.66	0.006848631
908	17-Aug-07	9,475.03	-0.001043034	12,712.59	-0.001558670	84.30	0.031803652	18,729.44	-0.004965087
909	20-Aug-07	9,405.70	-0.007343791	12,698.90	-0.001077856	82.07	-0.026776247	18,663.67	-0.003517266
910	21-Aug-07	9,435.53	0.003166437	12,714.02	0.001190346	82.16	0.001027511	18,738.27	0.003988927
911	22-Aug-07	9,429.53	-0.000636055	12,712.89	-0.000088974	82.45	0.003530056	18,702.65	-0.001902862
912	23-Aug-07	9,377.91	-0.005489358	12,706.57	-0.000497600	80.97	-0.018072575	18,719.08	0.000878096
913	24-Aug-07	9,410.55	0.003473701	12,765.57	0.004632825	81.17	0.002490734	18,846.34	0.006775531
914	27-Aug-07	9,382.58	-0.002976009	12,834.37	0.005375273	80.68	-0.006063093	18,926.58	0.004248531
915	28-Aug-07	9,399.90	0.001844297	12,807.02	-0.002133772	81.32	0.007905961	18,850.18	-0.004044732
916	29-Aug-07	9,423.05	0.002459795	12,800.20	-0.000532329	82.47	0.013970113	18,843.77	-0.000340081
917	30-Aug-07	9,412.41	-0.001129676	12,854.75	0.004252419	81.64	-0.010139496	18,959.72	0.006134375
918	31-Aug-07	9,409.54	-0.000304905	12,860.23	0.000426476	81.00	-0.007827992	18,962.22	0.000131565
919	03-Sep-07	9,387.23	-0.002373880	12,810.69	-0.003860225	80.85	-0.001873646	18,947.24	-0.000790230
920	04-Sep-07	9,383.16	-0.000433665	12,785.10	-0.001999007	80.96	0.001435496	18,940.43	-0.000359461
921	05-Sep-07	9,405.12	0.002337544	12,771.18	-0.001089245	81.20	0.002869139	18,895.12	-0.002394983
922	06-Sep-07	9,415.77	0.001130935	12,847.20	0.005934471	81.65	0.005583485	19,018.65	0.006516061
923	10-Sep-07	9,418.36	0.000275860	12,979.33	0.010232358	83.21	0.018856740	19,118.81	0.005252913
924	11-Sep-07	9,429.26	0.001156515	12,998.83	0.001501410	82.83	-0.004584466	19,103.38	-0.000807446
925	12-Sep-07	9,419.72	-0.001012761	13,060.72	0.004749402	82.69	-0.001623830	19,165.04	0.003222666
926	13-Sep-07	9,414.92	-0.000509558	13,078.96	0.001395869	82.42	-0.003253666	19,089.15	-0.003967771
927	14-Sep-07	9,379.61	-0.003756924	13,011.23	-0.005191862	81.53	-0.010835675	18,939.65	-0.007862661
928	17-Sep-07	9,371.96	-0.000816005	13,008.22	-0.000231255	81.30	-0.002856932	18,804.09	-0.007183186
929	18-Sep-07	9,391.86	0.002120661	13,011.34	0.000239896	81.75	0.005509009	18,684.71	-0.006368563
930	19-Sep-07	9,258.56	-0.014294320	12,941.95	-0.005347812	79.91	-0.022760018	18,652.80	-0.001709495
931	20-Sep-07	9,184.50	-0.008031205	12,839.49	-0.007948559	79.31	-0.007587306	18,369.01	-0.015331367
932	21-Sep-07	9,187.76	0.000354277	12,949.57	0.008537332	80.02	0.008952208	18,469.01	0.005429259
933	24-Sep-07	9,130.54	-0.006247742	12,891.57	-0.004489286	79.36	-0.008250714	18,521.64	0.002845437
934	25-Sep-07	9,156.75	0.002867208	12,895.72	0.000322269	79.84	0.005958681	18,434.88	-0.004694915
935	26-Sep-07	9,137.65	-0.002087760	12,921.46	0.001993712	79.61	-0.002784472	18,435.77	0.000047918
936	27-Sep-07	9,140.38	0.000298744	12,923.37	0.000148318	79.10	-0.006470161	18,438.22	0.000132919
937	28-Sep-07	9,143.54	0.000344788	12,950.90	0.002127556	79.41	0.003865072	18,481.80	0.002360648
938	02-Oct-07	9,073.36	-0.007704252	12,901.62	-0.003812218	78.60	-0.010249685	18,518.77	0.001998845
939	03-Oct-07	9,104.73	0.003451003	12,896.79	-0.000374223	78.66	0.000731874	18,577.67	0.003175022
940	04-Oct-07	9,139.71	0.003834816	12,874.50	-0.001730092	78.46	-0.002505448	18,542.48	-0.001895644
941	05-Oct-07	9,102.80	-0.004047302	12,859.87	-0.001136829	78.06	-0.005105337	18,548.46	0.000322398
942	08-Oct-07	9,040.97	-0.006814573	12,782.21	-0.006057150	77.22	-0.010866066	18,458.06	-0.004885692
943	09-Oct-07	9,098.24	0.006314160	12,760.41	-0.001707373	77.64	0.005491710	18,501.14	0.002331156
944	10-Oct-07	9,057.53	-0.004484946	12,772.63	0.000957666	77.23	-0.005309736	18,458.05	-0.002331712
945	11-Oct-07	9,085.15	0.003044913	12,870.87	0.007661362	77.46	0.003002759	18,532.88	0.004045859
946	12-Oct-07	9,022.71	-0.006896694	12,799.62	-0.005550755	76.99	-0.006144223	18,318.64	-0.011627099
947	15-Oct-07	9,060.40	0.004168344	12,845.96	0.003613893	77.02	0.000365155	18,436.31	0.006402554
948	16-Oct-07	9,059.79	-0.000066689	12,876.32	0.002360731	77.19	0.002258997	18,502.04	0.003559244
949	17-Oct-07	9,138.01	0.008596475	12,955.89	0.006160644	78.54	0.017362469	18,565.85	0.003442566
950	18-Oct-07	9,094.47	-0.004775935	12,944.08	-0.000912169	78.01	-0.006759141	18,562.94	-0.000156443

NO	TANGGAL	United States Dollar		Euro		Japanese Yen		UK Pound Sterling	
		USD		EUR		JPY		GBP	
		Kurs	Return	Kurs	Return	Kurs	Return	Kurs	Return
951	19-Oct-07	9,093.55	-0.000100769	13,014.09	0.005394226	79.08	0.013559065	18,629.07	0.003555960
952	22-Oct-07	9,119.57	0.002856569	13,058.20	0.003383221	79.87	0.010019731	18,706.70	0.004158390
953	23-Oct-07	9,128.44	0.000971893	12,970.99	-0.006700676	79.65	-0.002785999	18,584.15	-0.006572458
954	24-Oct-07	9,155.34	0.002942767	13,047.48	0.005879803	80.09	0.005534134	18,749.43	0.008854170
955	25-Oct-07	9,179.69	0.002656576	13,092.49	0.003443556	80.55	0.005737890	18,782.04	0.001737596
956	26-Oct-07	9,134.77	-0.004905234	13,093.37	0.000066963	79.93	-0.007818974	18,748.59	-0.001782195
957	29-Oct-07	9,093.27	-0.004553837	13,106.67	0.001015885	79.67	-0.003267785	18,683.86	-0.003458703
958	30-Oct-07	9,112.93	0.002159679	13,115.58	0.000679034	79.63	-0.000407430	18,768.54	0.004522006
959	31-Oct-07	9,098.31	-0.001605859	13,134.40	0.001433953	79.30	-0.004223047	18,821.55	0.002820399
960	01-Nov-07	9,083.29	-0.001652082	13,134.42	0.000001724	78.78	-0.006593493	18,874.50	0.002809247
961	02-Nov-07	9,132.85	0.005441874	13,194.14	0.004536291	79.65	0.011042037	18,990.70	0.006137755
962	05-Nov-07	9,144.94	0.001322215	13,253.03	0.004453639	79.80	0.001917229	19,094.83	0.005468062
963	06-Nov-07	9,168.47	0.002570420	13,278.38	0.001910840	79.96	0.001995207	19,090.29	-0.000237482
964	07-Nov-07	9,107.30	-0.006695046	13,329.69	0.003856824	79.80	-0.002100508	19,068.78	-0.001127530
965	08-Nov-07	9,151.88	0.004883809	13,392.43	0.004695908	81.16	0.016931624	19,214.17	0.007595660
966	09-Nov-07	9,125.47	-0.002890039	13,430.02	0.002802690	80.94	-0.002676681	19,265.58	0.002671698
967	12-Nov-07	9,177.50	0.005685179	13,435.04	0.000373628	83.37	0.029523874	19,073.13	-0.010039547
968	13-Nov-07	9,187.94	0.001137352	13,387.41	-0.003551163	83.35	-0.000223445	18,953.60	-0.006286600
969	14-Nov-07	9,172.39	-0.001694086	13,446.48	0.004402626	82.61	-0.008922569	19,054.09	0.005287831
970	15-Nov-07	9,240.08	0.007353044	13,558.85	0.008322005	82.93	0.003881205	19,001.60	-0.002758375
971	16-Nov-07	9,348.46	0.011661062	13,663.97	0.007722871	84.90	0.023429079	19,102.45	0.005293230
972	19-Nov-07	9,295.79	-0.005650431	13,629.35	-0.002536958	84.06	-0.009841723	19,091.75	-0.000560323
973	20-Nov-07	9,373.02	0.008273638	13,746.06	0.008526545	85.03	0.011435294	19,211.32	0.006243628
974	21-Nov-07	9,377.47	0.000474393	13,916.32	0.012310009	85.79	0.008916942	19,382.28	0.008859790
975	22-Nov-07	9,376.21	-0.000133642	13,933.79	0.001254436	86.06	0.003153029	19,369.84	-0.000642403
976	23-Nov-07	9,378.43	0.000236762	13,995.56	0.004423492	87.06	0.011487575	19,419.29	0.002550021
977	26-Nov-07	9,370.97	-0.000796239	13,890.66	-0.007523431	86.41	-0.007499392	19,339.25	-0.004130475
978	27-Nov-07	9,387.66	0.001779728	13,958.37	0.004862623	86.70	0.003409942	19,462.01	0.006327764
979	28-Nov-07	9,406.26	0.001978826	13,939.09	-0.001382370	86.75	0.000575476	19,443.00	-0.000977162
980	29-Nov-07	9,381.65	-0.002619099	13,906.33	-0.002352820	85.35	-0.016305246	19,482.60	0.002034359
981	30-Nov-07	9,372.81	-0.000942604	13,816.10	-0.006509765	84.93	-0.004888613	19,336.75	-0.007514323
982	03-Dec-07	9,348.64	-0.002582371	13,708.95	-0.007785260	84.58	-0.004130583	19,228.43	-0.005617280
983	04-Dec-07	9,307.94	-0.004363389	13,652.68	-0.004112839	84.43	-0.001750791	19,209.16	-0.001002745
984	05-Dec-07	9,269.47	-0.004141526	13,677.97	0.001850051	84.03	-0.004837901	19,064.49	-0.007559613
985	06-Dec-07	9,247.85	-0.002334666	13,517.40	-0.011808262	83.40	-0.007511031	18,781.68	-0.014945757
986	07-Dec-07	9,255.76	0.000854123	13,521.48	0.000301460	83.16	-0.002916439	18,720.61	-0.003256876
987	10-Dec-07	9,249.20	-0.000708390	13,543.86	0.001653859	82.91	-0.002974494	18,789.99	0.003699093
988	11-Dec-07	9,284.27	0.003784089	13,672.52	0.009454870	83.08	0.002080883	19,004.84	0.011369484
989	12-Dec-07	9,317.35	0.003557136	13,660.25	-0.000897920	84.00	0.010959586	18,981.40	-0.001234250
990	13-Dec-07	9,311.20	-0.000659991	13,712.05	0.003784439	83.24	-0.009068801	19,065.18	0.004404437
991	14-Dec-07	9,329.30	0.001941880	13,643.04	-0.005045473	83.00	-0.002851078	19,025.35	-0.002091195
992	17-Dec-07	9,373.40	0.004716057	13,537.79	-0.007744077	82.91	-0.001097191	18,931.33	-0.004954143
993	18-Dec-07	9,418.20	0.004767483	13,562.33	0.001811155	83.19	0.003313912	19,004.46	0.003855343
994	19-Dec-07	9,394.99	-0.002466961	13,548.39	-0.001028770	82.93	-0.003132728	18,930.41	-0.003904317
995	20-Dec-07	9,429.94	0.003712528	13,556.23	0.000578412	83.27	0.004160548	18,829.14	-0.005363581
996	21-Dec-07	9,430.46	0.000055508	13,538.72	-0.001292357	83.39	0.001459238	18,737.04	-0.004903740
997	24-Dec-07	9,409.67	-0.002207440	13,535.84	-0.000212694	82.50	-0.010817017	18,664.69	-0.003868690
998	27-Dec-07	9,409.55	-0.000012598	13,631.70	0.007057159	82.37	-0.001585262	18,703.75	0.002090392
999	28-Dec-07	9,430.96	0.002272947	13,774.25	0.010402699	83.22	0.010309554	18,818.83	0.006133924
1000	31-Dec-07	9,394.28	-0.003896512	13,849.50	0.005448285	83.85	0.007572180	18,771.53	-0.002516258

LAMPIRAN II UJI STASIONARITAS RETURN USD

Null Hypothesis: RETURN_USD has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on AIC, MAXLAG=21)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-33.07204	0.0000
Test critical values:	1% level	-3.967261	
	5% level	-3.414318	
	10% level	-3.129280	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RETURN_USD)
Method: Least Squares
Date: 05/13/08 Time: 14:47
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RETURN_USD(-1)	-1.046977	0.031657	-33.07204	0.0000
C	0.000399	0.000335	1.189596	0.2345
@TREND(1)	-5.46E-07	5.81E-07	-0.939502	0.3477

R-squared	0.523391	Mean dependent var	-2.48E-06
Adjusted R-squared	0.522434	S.D. dependent var	0.007657
S.E. of regression	0.005292	Akaike info criterion	-7.642339
Sum squared resid	0.027891	Schwarz criterion	-7.627604
Log likelihood	3820.348	F-statistic	546.8817
Durbin-Watson stat	1.995444	Prob(F-statistic)	0.000000

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN III UJI STASIONARITAS RETURN EUR

Null Hypothesis: RETURN_EUR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on AIC, MAXLAG=21)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-32.80247	0.0000
Test critical values:	1% level	-3.967261	
	5% level	-3.414318	
	10% level	-3.129280	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RETURN_EUR)
Method: Least Squares
Date: 05/13/08 Time: 14:38
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RETURN_EUR(-1)	-1.038516	0.031660	-32.80247	0.0000
C	7.34E-05	0.000424	0.172987	0.8627
@TREND(1)	3.89E-07	7.35E-07	0.530022	0.5962

R-squared	0.519307	Mean dependent var	-4.40E-07
Adjusted R-squared	0.518342	S.D. dependent var	0.009651
S.E. of regression	0.006698	Akaike info criterion	-7.171078
Sum squared resid	0.044681	Schwarz criterion	-7.156343
Log likelihood	3584.954	F-statistic	538.0048
Durbin-Watson stat	1.998885	Prob(F-statistic)	0.000000

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN IV UJI STATIONARITAS RETURN JPY

Null Hypothesis: RETURN_JPY has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on AIC, MAXLAG=21)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-32.73455	0.0000
Test critical values:	1% level	-3.967261	
	5% level	-3.414318	
	10% level	-3.129280	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RETURN_JPY)
Method: Least Squares
Date: 05/13/08 Time: 14:42
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RETURN_JPY(-1)	-1.037083	0.031682	-32.73455	0.0000
C	0.000130	0.000449	0.290540	0.7715
@TREND(1)	-1.19E-07	7.77E-07	-0.152934	0.8785

R-squared	0.518271	Mean dependent var	9.21E-06
Adjusted R-squared	0.517304	S.D. dependent var	0.010197
S.E. of regression	0.007085	Akaike info criterion	-7.058728
Sum squared resid	0.049994	Schwarz criterion	-7.043993
Log likelihood	3528.834	F-statistic	535.7762
Durbin-Watson stat	1.997217	Prob(F-statistic)	0.000000

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN V UJI STATIONARITAS RETURN GBP

Null Hypothesis: RETURN_JPY has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on AIC, MAXLAG=21)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-32.73455	0.0000
Test critical values:	1% level	-3.967261	
	5% level	-3.414318	
	10% level	-3.129280	

*MacKinnon (1996) one-sided p-values.

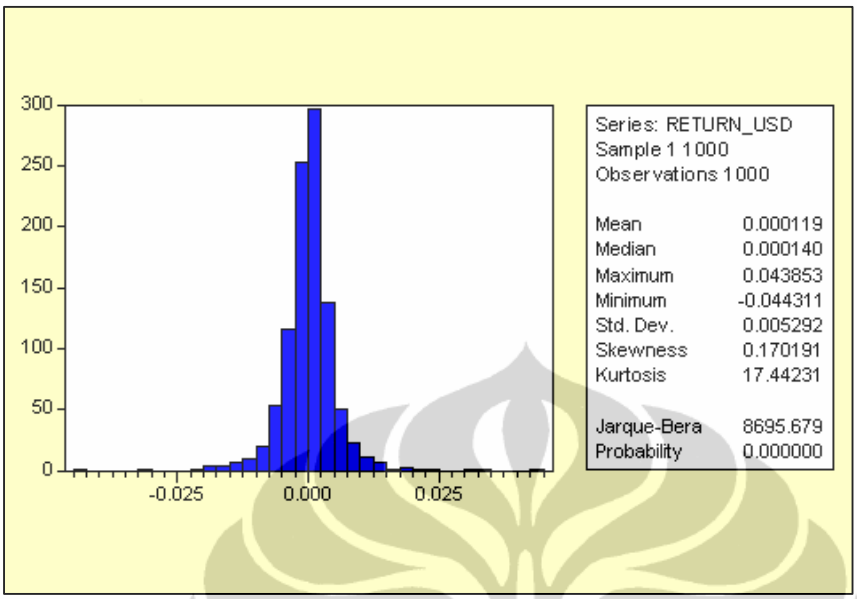
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RETURN_JPY)
Method: Least Squares
Date: 05/13/08 Time: 14:42
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RETURN_JPY(-1)	-1.037083	0.031682	-32.73455	0.0000
C	0.000130	0.000449	0.290540	0.7715
@TREND(1)	-1.19E-07	7.77E-07	-0.152934	0.8785

R-squared	0.518271	Mean dependent var	9.21E-06
Adjusted R-squared	0.517304	S.D. dependent var	0.010197
S.E. of regression	0.007085	Akaike info criterion	-7.058728
Sum squared resid	0.049994	Schwarz criterion	-7.043993
Log likelihood	3528.834	F-statistic	535.7762
Durbin-Watson stat	1.997217	Prob(F-statistic)	0.000000

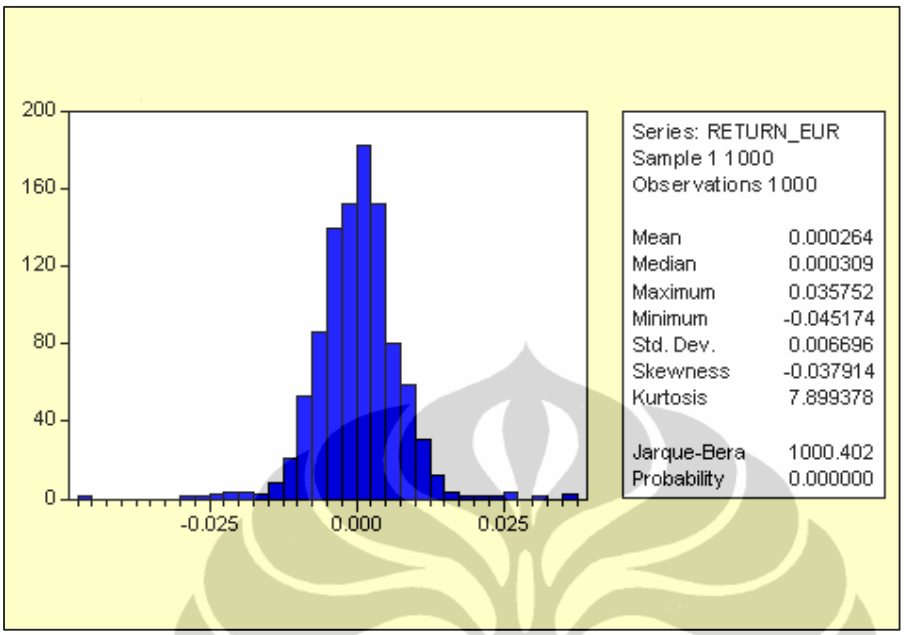
Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN VI PENGUJIAN NORMALITAS RETURN USD



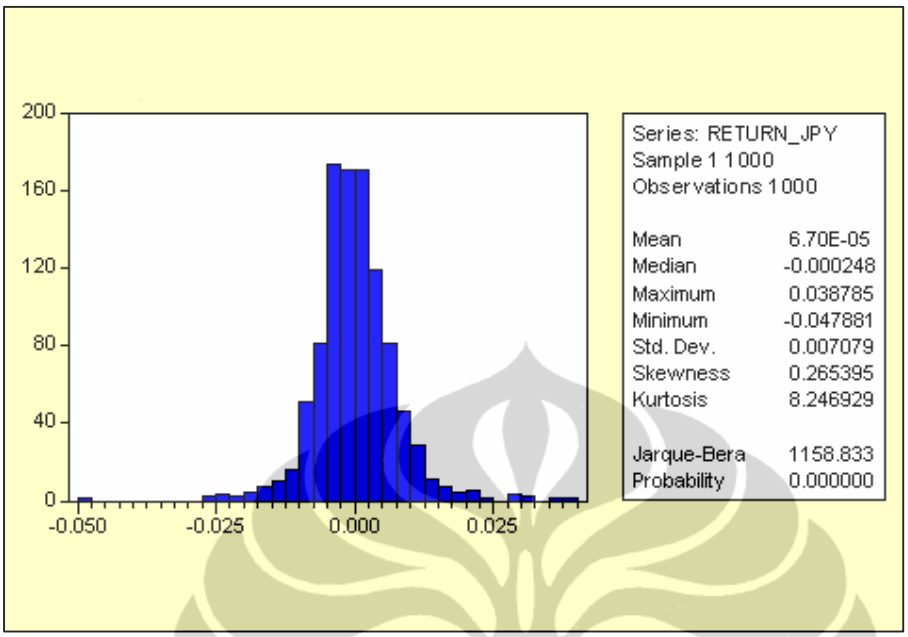
Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN VII PENGUJIAN NORMALITAS RETURN EUR



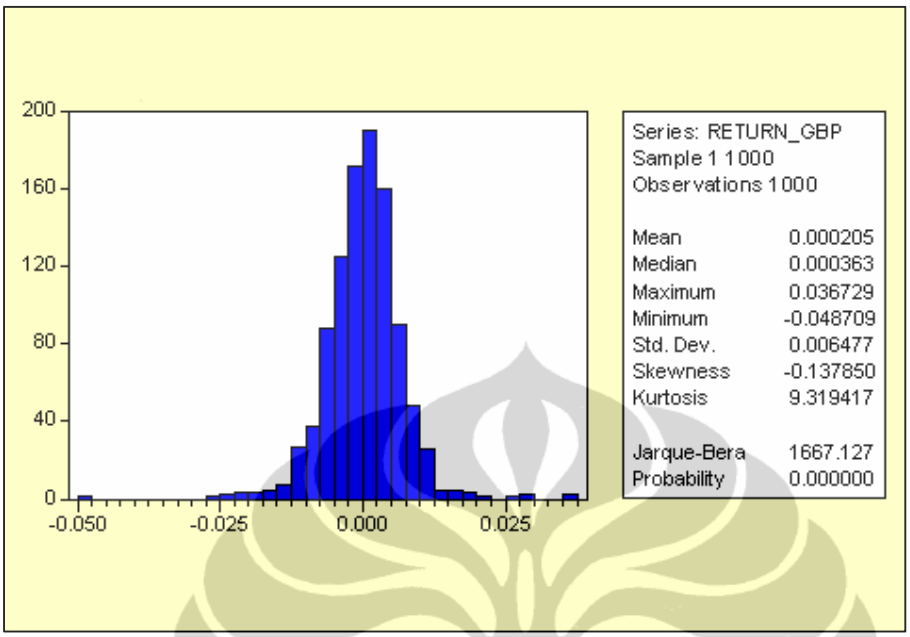
Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN VIII PENGUJIAN NORMALITAS RETURN JPY



Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN IX PENGUJIAN NORMALITAS RETURN GBP



Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN X PENGUJIAN WHITE HETEROSKEDASTISITAS RETURN USD

White Heteroskedasticity Test:

F-statistic	208.0868	Probability	0.000000
Obs*R-squared	294.3233	Probability	0.000000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 05/14/08 Time: 08:13
Sample: 3 1000
Included observations: 998

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.48E-05	3.07E-06	4.818428	0.0000
RESID_USD(-1)	0.005092	0.000566	8.997370	0.0000
RESID_USD(-1)^2	0.469248	0.026763	17.53322	0.0000

R-squared	0.294913	Mean dependent var	2.79E-05
Adjusted R-squared	0.293496	S.D. dependent var	0.000112
S.E. of regression	9.42E-05	Akaike info criterion	-15.70008
Sum squared resid	8.82E-06	Schwarz criterion	-15.68533
Log likelihood	7837.341	F-statistic	208.0868
Durbin-Watson stat	1.857990	Prob(F-statistic)	0.000000

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XI PENGUJIAN WHITE HETEROSKEDASTISITAS RETURN EUR

White Heteroskedasticity Test:

F-statistic	69.79931	Probability	0.000000
Obs*R-squared	122.7918	Probability	0.000000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 05/14/08 Time: 08:11
Sample: 3 1000
Included observations: 998

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.15E-05	3.70E-06	8.525191	0.0000
RESID_EUR(-1)	0.003240	0.000516	6.282460	0.0000
RESID_EUR(-1)^2	0.295574	0.029685	9.956881	0.0000

R-squared	0.123038	Mean dependent var	4.47E-05
Adjusted R-squared	0.121275	S.D. dependent var	0.000116
S.E. of regression	0.000109	Akaike info criterion	-15.40762
Sum squared resid	1.18E-05	Schwarz criterion	-15.39287
Log likelihood	7691.401	F-statistic	69.79931
Durbin-Watson stat	1.995423	Prob(F-statistic)	0.000000

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XII PENGUJIAN WHITE HETEROSKEDASTISITAS RETURN JPY

White Heteroskedasticity Test:

F-statistic	208.0868	Probability	0.000000
Obs*R-squared	294.3233	Probability	0.000000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 05/14/08 Time: 08:13
Sample: 3 1000
Included observations: 998

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.48E-05	3.07E-06	4.818428	0.0000
RESID_JPY(-1)	0.005092	0.000566	8.997370	0.0000
RESID_JPY(-1)^2	0.469248	0.026763	17.53322	0.0000

R-squared	0.294913	Mean dependent var	2.79E-05
Adjusted R-squared	0.293496	S.D. dependent var	0.000112
S.E. of regression	9.42E-05	Akaike info criterion	-15.70008
Sum squared resid	8.82E-06	Schwarz criterion	-15.68533
Log likelihood	7837.341	F-statistic	208.0868
Durbin-Watson stat	1.857990	Prob(F-statistic)	0.000000

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XIII PENGUJIAN WHITE HETEROSKEDASTISITAS RETURN GBP

White Heteroskedasticity Test:

F-statistic	208.0868	Probability	0.000000
Obs*R-squared	294.3233	Probability	0.000000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 05/14/08 Time: 08:12
Sample: 3 1000
Included observations: 998

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.48E-05	3.07E-06	4.818428	0.0000
RESID_GBP(-1)	0.005092	0.000566	8.997370	0.0000
RESID_GBP(-1)^2	0.469248	0.026763	17.53322	0.0000

R-squared	0.294913	Mean dependent var	2.79E-05
Adjusted R-squared	0.293496	S.D. dependent var	0.000112
S.E. of regression	9.42E-05	Akaike info criterion	-15.70008
Sum squared resid	8.82E-06	Schwarz criterion	-15.68533
Log likelihood	7837.341	F-statistic	208.0868
Durbin-Watson stat	1.857990	Prob(F-statistic)	0.000000

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XIV HASIL OUTPUT EVIEWS ARCH (1,0) RETURN USD

Dependent Variable: RETURN_USD
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:51
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 20 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000176	0.000111	1.580922	0.1139
RETURN_USD(-1)	-0.164268	0.030759	-5.340517	0.0000
Variance Equation				
C	1.34E-05	4.26E-07	31.42962	0.0000
ARCH(1)	0.679255	0.050807	13.36939	0.0000

R-squared	-0.011851	Mean dependent var	0.000120
Adjusted R-squared	-0.014901	S.D. dependent var	0.005294
S.E. of regression	0.005334	Akaike info criterion	-7.889190
Sum squared resid	0.028306	Schwarz criterion	-7.869543
Log likelihood	3944.650	Durbin-Watson stat	1.753253

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XV HASIL OUTPUT EVIEWS ARCH (2,0) RETURN USD

Dependent Variable: RETURN_USD
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:52
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 28 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000152	0.000119	1.282551	0.1996
RETURN_USD(-1)	-0.092158	0.034879	-2.642181	0.0082
Variance Equation				
C	1.20E-05	4.21E-07	28.54709	0.0000
ARCH(1)	0.591049	0.057231	10.32737	0.0000
ARCH(2)	0.128040	0.035939	3.562677	0.0004

R-squared	0.000004	Mean dependent var	0.000120
Adjusted R-squared	-0.004020	S.D. dependent var	0.005294
S.E. of regression	0.005305	Akaike info criterion	-7.902779
Sum squared resid	0.027975	Schwarz criterion	-7.878220
Log likelihood	3952.438	F-statistic	0.000971
Durbin-Watson stat	1.899652	Prob(F-statistic)	0.999998

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XVI HASIL OUTPUT EVIEWS ARCH (1,1) RETURN USD

Dependent Variable: RETURN_USD
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:53
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 27 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000194	0.000128	1.514061	0.1300
RETURN_USD(-1)	-0.018212	0.033753	-0.539560	0.5895
Variance Equation				
C	2.35E-06	2.51E-07	9.373133	0.0000
ARCH(1)	0.296093	0.032043	9.240454	0.0000
GARCH(1)	0.656863	0.022522	29.16600	0.0000

R-squared	0.001166	Mean dependent var	0.000120
Adjusted R-squared	-0.002853	S.D. dependent var	0.005294
S.E. of regression	0.005302	Akaike info criterion	-7.983616
Sum squared resid	0.027942	Schwarz criterion	-7.959058
Log likelihood	3992.816	F-statistic	0.290122
Durbin-Watson stat	2.053429	Prob(F-statistic)	0.884480

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XVII HASIL OUTPUT EVIEWS ARCH (1,2) RETURN USD

Dependent Variable: RETURN_USD
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:55
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 26 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000221	0.000110	2.002368	0.0452
RETURN_USD(-1)	-0.039868	0.036658	-1.087562	0.2768
Variance Equation				
C	3.18E-06	3.52E-07	9.017989	0.0000
ARCH(1)	0.438670	0.042755	10.26009	0.0000
GARCH(1)	0.056741	0.030716	1.847236	0.0647
GARCH(2)	0.451732	0.034507	13.09120	0.0000

R-squared	0.001767	Mean dependent var	0.000120
Adjusted R-squared	-0.003259	S.D. dependent var	0.005294
S.E. of regression	0.005303	Akaike info criterion	-8.003380
Sum squared resid	0.027925	Schwarz criterion	-7.973910
Log likelihood	4003.688	F-statistic	0.351570
Durbin-Watson stat	2.007879	Prob(F-statistic)	0.881391

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XVIII HASIL OUTPUT EVIEWS ARCH (2,1) RETURN USD

Dependent Variable: RETURN_USD
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:55
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 29 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000220	0.000119	1.854233	0.0637
RETURN_USD(-1)	-0.043048	0.039258	-1.096532	0.2728
Variance Equation				
C	1.82E-06	2.92E-07	6.240799	0.0000
ARCH(1)	0.393650	0.055731	7.063364	0.0000
ARCH(2)	-0.162505	0.060235	-2.697838	0.0070
GARCH(1)	0.731599	0.034061	21.47882	0.0000

R-squared	0.001802	Mean dependent var	0.000120
Adjusted R-squared	-0.003224	S.D. dependent var	0.005294
S.E. of regression	0.005303	Akaike info criterion	-7.986145
Sum squared resid	0.027924	Schwarz criterion	-7.956675
Log likelihood	3995.080	F-statistic	0.358476
Durbin-Watson stat	2.001243	Prob(F-statistic)	0.876920

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XIX HASIL OUTPUT EVIEWS ARCH (2,2) RETURN USD

Dependent Variable: RETURN_USD
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:56
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence not achieved after 500 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000222	0.000112	1.984283	0.0472
RETURN_USD(-1)	-0.038840	0.037512	-1.035403	0.3005
Variance Equation				
C	3.22E-06	3.89E-07	8.281312	0.0000
ARCH(1)	0.437980	0.045202	9.689298	0.0000
ARCH(2)	0.012859	0.049474	0.259921	0.7949
GARCH(1)	0.039559	0.074756	0.529178	0.5967
GARCH(2)	0.458005	0.048093	9.523319	0.0000

R-squared	0.001743	Mean dependent var	0.000120
Adjusted R-squared	-0.004295	S.D. dependent var	0.005294
S.E. of regression	0.005306	Akaike info criterion	-8.001437
Sum squared resid	0.027926	Schwarz criterion	-7.967056
Log likelihood	4003.718	F-statistic	0.288639
Durbin-Watson stat	2.010005	Prob(F-statistic)	0.942481

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XX HASIL OUTPUT EVIEWS ARCH (1,0) RETURN EUR

Dependent Variable: RETURN_EUR
Method: ML - ARCH (Marquardt)
Date: 05/28/08 Time: 18:27
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 11 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000243	0.000197	1.234121	0.2172
RETURN_EUR(-1)	-0.032106	0.034964	-0.918272	0.3585
Variance Equation				
C	3.34E-05	1.56E-06	21.42420	0.0000
ARCH(1)	0.253366	0.037701	6.720427	0.0000

R-squared	0.001416	Mean dependent var	0.000258
Adjusted R-squared	-0.001595	S.D. dependent var	0.006697
S.E. of regression	0.006702	Akaike info criterion	-7.243682
Sum squared resid	0.044696	Schwarz criterion	-7.224035
Log likelihood	3622.219	F-statistic	0.470211
Durbin-Watson stat	2.010680	Prob(F-statistic)	0.703113

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXI HASIL OUTPUT EVIEWS ARCH (2,0) RETURN EUR

Dependent Variable: RETURN_EUR
Method: ML - ARCH (Marquardt)
Date: 05/28/08 Time: 18:27
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 11 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000243	0.000197	1.234121	0.2172
RETURN_EUR(-1)	-0.032106	0.034964	-0.918272	0.3585
Variance Equation				
C	3.34E-05	1.56E-06	21.42420	0.0000
ARCH(1)	0.253366	0.037701	6.720427	0.0000

R-squared	0.001416	Mean dependent var	0.000258
Adjusted R-squared	-0.001595	S.D. dependent var	0.006697
S.E. of regression	0.006702	Akaike info criterion	-7.243682
Sum squared resid	0.044696	Schwarz criterion	-7.224035
Log likelihood	3622.219	F-statistic	0.470211
Durbin-Watson stat	2.010680	Prob(F-statistic)	0.703113

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXII HASIL OUTPUT EVIEWS ARCH (1,1) RETURN EUR

Dependent Variable: RETURN_EUR
Method: ML - ARCH (Marquardt)
Date: 05/28/08 Time: 18:29
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 16 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000332	0.000192	1.731450	0.0834
RETURN_EUR(-1)	-0.012984	0.031222	-0.415856	0.6775
Variance Equation				
C	9.81E-07	3.06E-07	3.205753	0.0013
ARCH(1)	0.080659	0.011577	6.966866	0.0000
GARCH(1)	0.899005	0.013943	64.47567	0.0000

R-squared	0.000714	Mean dependent var	0.000258
Adjusted R-squared	-0.003307	S.D. dependent var	0.006697
S.E. of regression	0.006708	Akaike info criterion	-7.302965
Sum squared resid	0.044727	Schwarz criterion	-7.278407
Log likelihood	3652.831	F-statistic	0.177671
Durbin-Watson stat	2.047429	Prob(F-statistic)	0.949947

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXIII HASIL OUTPUT EVIEWS ARCH (1,2) RETURN EUR

Dependent Variable: RETURN_EUR
Method: ML - ARCH (Marquardt)
Date: 05/28/08 Time: 18:29
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 16 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000332	0.000192	1.731450	0.0834
RETURN_EUR(-1)	-0.012984	0.031222	-0.415856	0.6775
Variance Equation				
C	9.81E-07	3.06E-07	3.205753	0.0013
ARCH(1)	0.080659	0.011577	6.966866	0.0000
GARCH(1)	0.899005	0.013943	64.47567	0.0000

R-squared	0.000714	Mean dependent var	0.000258
Adjusted R-squared	-0.003307	S.D. dependent var	0.006697
S.E. of regression	0.006708	Akaike info criterion	-7.302965
Sum squared resid	0.044727	Schwarz criterion	-7.278407
Log likelihood	3652.831	F-statistic	0.177671
Durbin-Watson stat	2.047429	Prob(F-statistic)	0.949947

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXIV HASIL OUTPUT EVIEWS ARCH (2,1) RETURN EUR

Dependent Variable: RETURN_EUR
Method: ML - ARCH (Marquardt)
Date: 05/28/08 Time: 18:35
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 21 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000327	0.000190	1.720886	0.0853
RETURN_EUR(-1)	-0.016316	0.034250	-0.476371	0.6338
Variance Equation				
C	4.82E-07	1.86E-07	2.588978	0.0096
ARCH(1)	0.173911	0.033702	5.160246	0.0000
ARCH(2)	-0.129650	0.033490	-3.871281	0.0001
GARCH(1)	0.944633	0.011387	82.95673	0.0000

R-squared	0.000891	Mean dependent var	0.000258
Adjusted R-squared	-0.004140	S.D. dependent var	0.006697
S.E. of regression	0.006711	Akaike info criterion	-7.309443
Sum squared resid	0.044719	Schwarz criterion	-7.279973
Log likelihood	3657.067	F-statistic	0.177016
Durbin-Watson stat	2.041030	Prob(F-statistic)	0.971225

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXV HASIL OUTPUT EVIEWS ARCH (2,2) RETURN EUR

Dependent Variable: RETURN_EUR
Method: ML - ARCH (Marquardt)
Date: 05/28/08 Time: 18:36
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 22 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000309	0.000186	1.655236	0.0979
RETURN_EUR(-1)	-0.016862	0.032623	-0.516877	0.6052
Variance Equation				
C	7.60E-07	2.76E-07	2.749505	0.0060
ARCH(1)	0.180370	0.031219	5.777515	0.0000
ARCH(2)	-0.114792	0.033264	-3.450954	0.0006
GARCH(1)	0.513140	0.117159	4.379841	0.0000
GARCH(2)	0.403356	0.110618	3.646388	0.0003

R-squared	0.000960	Mean dependent var	0.000258
Adjusted R-squared	-0.005083	S.D. dependent var	0.006697
S.E. of regression	0.006714	Akaike info criterion	-7.312851
Sum squared resid	0.044716	Schwarz criterion	-7.278470
Log likelihood	3659.769	F-statistic	0.158832
Durbin-Watson stat	2.040067	Prob(F-statistic)	0.987280

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXVI HASIL OUTPUT EVIEWS ARCH (1,0) RETURN JPY

Dependent Variable: RETURN_JPY
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:22
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 12 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	-7.78E-05	0.000208	-0.373562	0.7087
RETURN_JPY(-1)	-0.025779	0.039518	-0.652341	0.5142
Variance Equation				
C	3.68E-05	1.36E-06	27.03326	0.0000
ARCH(1)	0.257082	0.041309	6.223355	0.0000

R-squared	0.000807	Mean dependent var	6.87E-05
Adjusted R-squared	-0.002206	S.D. dependent var	0.007083
S.E. of regression	0.007090	Akaike info criterion	-7.147722
Sum squared resid	0.050023	Schwarz criterion	-7.128076
Log likelihood	3574.287	F-statistic	0.267881
Durbin-Watson stat	2.019393	Prob(F-statistic)	0.848576

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXVII HASIL OUTPUT EVIEWS ARCH (2,0) RETURN JPY

Dependent Variable: RETURN_JPY
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:21
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 12 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.000156	0.000209	-0.747993	0.4545
RETURN_JPY(-1)	-0.030826	0.038726	-0.796000	0.4260
Variance Equation				
C	3.43E-05	1.61E-06	21.26457	0.0000
ARCH(1)	0.258788	0.042228	6.128361	0.0000
ARCH(2)	0.057724	0.019716	2.927818	0.0034

R-squared	0.000307	Mean dependent var	6.87E-05
Adjusted R-squared	-0.003716	S.D. dependent var	0.007083
S.E. of regression	0.007096	Akaike info criterion	-7.150183
Sum squared resid	0.050048	Schwarz criterion	-7.125624
Log likelihood	3576.516	F-statistic	0.076363
Durbin-Watson stat	2.007898	Prob(F-statistic)	0.989442

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXVIII HASIL OUTPUT EVIEWS ARCH (1,1) RETURN JPY

Dependent Variable: RETURN_JPY
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:21
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 15 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.000162	0.000190	-0.855256	0.3924
RETURN_JPY(-1)	-0.025477	0.033633	-0.757507	0.4487
Variance Equation				
C	3.32E-06	8.01E-07	4.143155	0.0000
ARCH(1)	0.140169	0.018666	7.509295	0.0000
GARCH(1)	0.801290	0.027558	29.07675	0.0000

R-squared	0.000158	Mean dependent var	6.87E-05
Adjusted R-squared	-0.003865	S.D. dependent var	0.007083
S.E. of regression	0.007096	Akaike info criterion	-7.194100
Sum squared resid	0.050056	Schwarz criterion	-7.169541
Log likelihood	3598.453	F-statistic	0.039349
Durbin-Watson stat	2.018713	Prob(F-statistic)	0.997056

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXIX HASIL OUTPUT EVIEWS ARCH (1,2) RETURN JPY

Dependent Variable: RETURN_JPY
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:20
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 18 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.000147	0.000191	-0.770355	0.4411
RETURN_JPY(-1)	-0.025769	0.035095	-0.734241	0.4628
Variance Equation				
C	3.60E-06	9.01E-07	3.993054	0.0001
ARCH(1)	0.167262	0.024095	6.941840	0.0000
GARCH(1)	0.461287	0.132552	3.480051	0.0005
GARCH(2)	0.308589	0.117820	2.619162	0.0088

R-squared	0.000300	Mean dependent var	6.87E-05
Adjusted R-squared	-0.004734	S.D. dependent var	0.007083
S.E. of regression	0.007099	Akaike info criterion	-7.194922
Sum squared resid	0.050049	Schwarz criterion	-7.165452
Log likelihood	3599.864	F-statistic	0.059637
Durbin-Watson stat	2.018392	Prob(F-statistic)	0.997670

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXX HASIL OUTPUT EVIEWS ARCH (2,1) RETURN JPY

Dependent Variable: RETURN_JPY
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:19
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 24 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.000135	0.000191	-0.703944	0.4815
RETURN_JPY(-1)	-0.026500	0.036729	-0.721508	0.4706
Variance Equation				
C	1.56E-06	4.40E-07	3.540299	0.0004
ARCH(1)	0.207799	0.037798	5.497582	0.0000
ARCH(2)	-0.123298	0.036271	-3.399348	0.0007
GARCH(1)	0.888999	0.017566	50.61006	0.0000

R-squared	0.000421	Mean dependent var	6.87E-05
Adjusted R-squared	-0.004612	S.D. dependent var	0.007083
S.E. of regression	0.007099	Akaike info criterion	-7.197465
Sum squared resid	0.050043	Schwarz criterion	-7.167995
Log likelihood	3601.134	F-statistic	0.083647
Durbin-Watson stat	2.017109	Prob(F-statistic)	0.994797

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXXI HASIL OUTPUT EVIEWS ARCH (2,2) RETURN JPY

Dependent Variable: RETURN_JPY
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 18:19
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 26 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.000134	0.000193	-0.694493	0.4874
RETURN_JPY(-1)	-0.026533	0.036884	-0.719362	0.4719
Variance Equation				
C	1.60E-06	5.18E-07	3.083195	0.0020
ARCH(1)	0.207890	0.037893	5.486179	0.0000
ARCH(2)	-0.121126	0.041129	-2.945025	0.0032
GARCH(1)	0.869825	0.160625	5.415247	0.0000
GARCH(2)	0.016230	0.139362	0.116463	0.9073

R-squared	0.000430	Mean dependent var	6.87E-05
Adjusted R-squared	-0.005616	S.D. dependent var	0.007083
S.E. of regression	0.007103	Akaike info criterion	-7.195466
Sum squared resid	0.050042	Schwarz criterion	-7.161085
Log likelihood	3601.135	F-statistic	0.071163
Durbin-Watson stat	2.017059	Prob(F-statistic)	0.998610

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXXII HASIL OUTPUT EVIEWS ARCH (1,0) RETURN GBP

Dependent Variable: RETURN_GBP
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 17:43
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 12 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000108	0.000186	0.584330	0.5590
RETURN_GBP(-1)	0.007618	0.037101	0.205324	0.8373
Variance Equation				
C	2.98E-05	1.40E-06	21.38056	0.0000
ARCH(1)	0.265349	0.034535	7.683447	0.0000

R-squared	-0.000381	Mean dependent var	0.000199
Adjusted R-squared	-0.003397	S.D. dependent var	0.006477
S.E. of regression	0.006488	Akaike info criterion	-7.343471
Sum squared resid	0.041887	Schwarz criterion	-7.323824
Log likelihood	3672.064	Durbin-Watson stat	2.032026

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXXIII HASIL OUTPUT EVIEWS ARCH (2,0) RETURN GBP

Dependent Variable: RETURN_GBP
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 17:44
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 11 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000108	0.000184	0.587570	0.5568
RETURN_GBP(-1)	0.001443	0.037185	0.038809	0.9690
Variance Equation				
C	2.82E-05	1.53E-06	18.41413	0.0000
ARCH(1)	0.269379	0.034531	7.800991	0.0000
ARCH(2)	0.043162	0.028858	1.495676	0.1347

R-squared	-0.000223	Mean dependent var	0.000199
Adjusted R-squared	-0.004248	S.D. dependent var	0.006477
S.E. of regression	0.006491	Akaike info criterion	-7.344743
Sum squared resid	0.041881	Schwarz criterion	-7.320184
Log likelihood	3673.699	Durbin-Watson stat	2.019769

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXXIV HASIL OUTPUT EVIEWS ARCH (1,1) RETURN GBP

Dependent Variable: RETURN_GBP
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 17:44
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 13 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000150	0.000177	0.845992	0.3976
RETURN_GBP(-1)	0.005436	0.030993	0.175398	0.8608
Variance Equation				
C	2.54E-06	6.91E-07	3.675128	0.0002
ARCH(1)	0.140215	0.017045	8.226023	0.0000
GARCH(1)	0.804267	0.024862	32.34886	0.0000

R-squared	-0.000180	Mean dependent var	0.000199
Adjusted R-squared	-0.004205	S.D. dependent var	0.006477
S.E. of regression	0.006491	Akaike info criterion	-7.373515
Sum squared resid	0.041879	Schwarz criterion	-7.348956
Log likelihood	3688.071	Durbin-Watson stat	2.027972

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXXV HASIL OUTPUT EVIEWS ARCH (1,2) RETURN GBP

Dependent Variable: RETURN_GBP
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 17:45
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 15 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000149	0.000173	0.860447	0.3895
RETURN_GBP(-1)	0.008049	0.033753	0.238480	0.8115
Variance Equation				
C	3.73E-06	1.00E-06	3.727317	0.0002
ARCH(1)	0.197641	0.024008	8.232297	0.0000
GARCH(1)	0.148010	0.076053	1.946139	0.0516
GARCH(2)	0.568984	0.074240	7.664162	0.0000

R-squared	-0.000262	Mean dependent var	0.000199
Adjusted R-squared	-0.005299	S.D. dependent var	0.006477
S.E. of regression	0.006494	Akaike info criterion	-7.380355
Sum squared resid	0.041882	Schwarz criterion	-7.350885
Log likelihood	3692.488	Durbin-Watson stat	2.033153

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXXVI HASIL OUTPUT EVIEWS ARCH (2,1) RETURN GBP

Dependent Variable: RETURN_GBP
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 17:46
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 13 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000177	0.000176	1.002384	0.3162
RETURN_GBP(-1)	0.003219	0.035045	0.091866	0.9268
Variance Equation				
C	1.66E-06	5.32E-07	3.130631	0.0017
ARCH(1)	0.202636	0.030601	6.621899	0.0000
ARCH(2)	-0.112524	0.033821	-3.327049	0.0009
GARCH(1)	0.871047	0.025344	34.36855	0.0000

R-squared	-0.000078	Mean dependent var	0.000199
Adjusted R-squared	-0.005114	S.D. dependent var	0.006477
S.E. of regression	0.006494	Akaike info criterion	-7.376638
Sum squared resid	0.041875	Schwarz criterion	-7.347168
Log likelihood	3690.631	Durbin-Watson stat	2.023664

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXXVII HASIL OUTPUT EVIEWS ARCH (2,2) RETURN GBP

Dependent Variable: RETURN_GBP
Method: ML - ARCH (Marquardt)
Date: 05/29/08 Time: 17:46
Sample(adjusted): 2 1000
Included observations: 999 after adjusting endpoints
Convergence achieved after 18 iterations
Variance backcast: ON

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000143	0.000174	0.821570	0.4113
RETURN_GBP(-1)	0.008961	0.034207	0.261974	0.7933
Variance Equation				
C	4.06E-06	1.14E-06	3.551216	0.0004
ARCH(1)	0.197441	0.024854	7.944038	0.0000
ARCH(2)	0.017063	0.038873	0.438947	0.6607
GARCH(1)	0.094820	0.128318	0.738945	0.4599
GARCH(2)	0.598690	0.098998	6.047494	0.0000

R-squared	-0.000309	Mean dependent var	0.000199
Adjusted R-squared	-0.006359	S.D. dependent var	0.006477
S.E. of regression	0.006498	Akaike info criterion	-7.378490
Sum squared resid	0.041884	Schwarz criterion	-7.344109
Log likelihood	3692.556	Durbin-Watson stat	2.034931

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XXXVIII ESTIMASI VOLATILITAS GARCH USD

DAY 1	Notation	USD	
	ω	0.000006	
	α_1	0.393650	
	α_2	-0.162505	
	β_1	0.731599	
	β_2		
	e_1	-0.003916	titik ke 1000
	e_2	0.002173	titik ke 999
	e_3	-0.000190	titik ke 998
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \alpha_1 et^2_{-2} + \beta_1 et^2_{-1} + Vt$	
	ht	0.0000114757	
DAY 2	Notation	USD	
	ω	0.000006	
	α_1	0.393650	
	α_2	-0.162505	
	β_1	0.731599	
	β_2		
	e_1	0.000217	titik ke 999
	e_2	-0.000190	titik ke 998
	e_3	-0.002459	titik ke 997
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \alpha_1 et^2_{-2} + \beta_1 et^2_{-1} + Vt$	
	ht	0.0000106165	
DAY 3	Notation	USD	
	ω	0.000006	
	α_1	0.393650	
	α_2	-0.162505	
	β_1	0.731599	
	β_2		
	e_1	-0.000190	titik ke 998
	e_2	-0.002459	titik ke 997
	e_3	0.000213	titik ke 996
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \alpha_1 et^2_{-2} + \beta_1 et^2_{-1} + Vt$	
	ht	0.0000052448	
DAY 4	Notation	USD	
	ω	0.000006	
	α_1	0.393650	
	α_2	-0.162505	
	β_1	0.731599	
	β_2		
	e_1	-0.002459	titik ke 997
	e_2	0.000213	titik ke 996
	e_3	0.003389	titik ke 995
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \alpha_1 et^2_{-2} + \beta_1 et^2_{-1} + Vt$	
	ht	0.0000169556	

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XIX ESTIMASI VOLATILITAS GARCH EUR

DAY 1	Notation	EUR	
	ω	0.000007	
	α_1	0.173911	
	α_2	-0.129650	
	β_1	0.944633	
	β_2		
	e_1	0.005579	titik ke 1000
	e_2	0.010405	titik ke 999
	e_3		titik ke 998
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \alpha_1 et^2_{-2} + \beta_1 et^2_{-1} + Vt$	
	ht	-0.0000012234	
DAY 2	Notation	EUR	
	ω	0.000007	
	α_1	0.173911	
	α_2	-0.129650	
	β_1	0.944633	
	β_2		
	e_1	0.010405	titik ke 999
	e_2	0.006781	titik ke 998
	e_3		titik ke 997
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \alpha_1 et^2_{-2} + \beta_1 et^2_{-1} + Vt$	
	ht	0.0000202667	
DAY 3	Notation	EUR	
	ω	0.000007	
	α_1	0.173911	
	α_2	-0.129650	
	β_1	0.944633	
	β_2		
	e_1	0.006781	titik ke 998
	e_2	-0.000530	titik ke 997
	e_3	-0.001538	titik ke 996
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \alpha_1 et^2_{-2} + \beta_1 et^2_{-1} + Vt$	
	ht	0.0000175948	
DAY 4	Notation	EUR	
	ω	0.000007	
	α_1	0.173911	
	α_2	-0.129650	
	β_1	0.944633	
	β_2		
	e_1	-0.000530	titik ke 997
	e_2	-0.001538	titik ke 996
	e_3	0.000271	titik ke 995
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \alpha_1 et^2_{-2} + \beta_1 et^2_{-1} + Vt$	
	ht	0.0000072115	

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XL ESTIMASI VOLATILITAS GARCH GBP

DAY 1	Notation	GBP	
	ω	0.000003	
	α_1	0.140215	
	α_2		
	β_1	0.804267	
	β_2		
	e_1	-0.003916	titik ke 1000
	e_2	0.002173	titik ke 999
	e_3		titik ke 998
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \beta_1 et^2_{-2} + Vt$	
	ht	0.0000046502	
DAY 2	Notation	GBP	
	ω	0.000003	
	α_1	0.140215	
	α_2		
	β_1	0.804267	
	β_2		
	e_1	0.002173	titik ke 999
	e_2	-0.000190	titik ke 998
	e_3		titik ke 997
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \beta_1 et^2_{-2} + Vt$	
	ht	0.0000031621	
DAY 3	Notation	GBP	
	ω	0.000003	
	α_1	0.140215	
	α_2		
	β_1	0.804267	
	β_2		
	e_1	-0.000190	titik ke 998
	e_2	-0.002459	titik ke 997
	e_3		titik ke 996
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \beta_1 et^2_{-2} + Vt$	
	ht	0.0000025051	
DAY 4	Notation	GBP	
	ω	0.000003	
	α_1	0.140215	
	α_2		
	β_1	0.804267	
	β_2		
	e_1	-0.002459	titik ke 997
	e_2	0.000213	titik ke 996
	e_3		titik ke 995
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \beta_1 et^2_{-2} + Vt$	
	ht	0.0000033478	

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XLI ESTIMASI VOLATILITAS GARCH YEN

DAY 1	Notation	YEN	
	ω	0.000000	
	α_1	0.120169	
	α_2		
	β_1	0.801290	
	β_2		
	e_1	-0.003916	titik ke 1000
	e_2	0.002173	titik ke 999
	e_3		
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \beta_1 et^2_{-2} + Vt$	
	ht	0.0000021748	
DAY 2	Notation	YEN	
	ω	0.000000	
	α_1	0.120169	
	α_2		
	β_1	0.801290	
	β_2		
	e_1	0.002173	titik ke 999
	e_2	-0.000190	titik ke 998
	e_3		
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \beta_1 et^2_{-2} + Vt$	
	ht	0.0000008994	
DAY 3	Notation	YEN	
	ω	0.000000	
	α_1	0.120169	
	α_2		
	β_1	0.801290	
	β_2		
	e_1	-0.000190	titik ke 998
	e_2	-0.002459	titik ke 997
	e_3		
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \beta_1 et^2_{-2} + Vt$	
	ht	0.0000003363	
DAY 4	Notation	YEN	
	ω	0.000000	
	α_1	0.120169	
	α_2		
	β_1	0.801290	
	β_2		
	e_1	-0.002459	titik ke 997
	e_2	0.000213	titik ke 996
	e_3		
		$ht = \alpha_0 + \alpha_1 et^2_{-1} + \beta_1 et^2_{-2} + Vt$	
	ht	0.0000010586	

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

LAMPIRAN XLIII ESTIMASI VOLATILITAS EWMA USD

Lambda = 0.7000000

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
1	**12-Jan-04**	8,330.550918	-0.001416950	0.00000201	0.00000060	0.00077610	0.00000201	0.0000000000
2	**13-Jan-04**	8,320.483166	-0.001209265	0.00000146	0.00000086	0.00092754	0.00000086	0.0000000000
3	**14-Jan-04**	8,328.611898	0.000976477	0.00000095	0.00000089	0.00094249	0.00000009	0.0000000000
4	**15-Jan-04**	8,352.287413	0.002838640	0.00000806	0.00000304	0.00174332	0.00000717	0.0000000001
5	**16-Jan-04**	8,369.226777	0.002026057	0.00000410	0.00000336	0.00183273	0.00000107	0.0000000000
6	**19-Jan-04**	8,362.796834	-0.000768579	0.00000059	0.00000253	0.00159010	-0.00000277	0.0000000000
7	**20-Jan-04**	8,418.481848	0.006636588	0.00004404	0.00001498	0.00387081	0.00004152	0.0000000017
8	**21-Jan-04**	8,399.584308	-0.002247291	0.00000505	0.00001200	0.00346458	-0.00000993	0.0000000001
9	**22-Jan-04**	8,400.155199	0.000067964	0.00000000	0.00000840	0.00289892	-0.00001200	0.0000000001
10	**23-Jan-04**	8,399.588319	-0.000067487	0.00000000	0.00000588	0.00242569	-0.00000840	0.0000000001
11	**27-Jan-04**	8,445.743990	0.005479950	0.00003003	0.00001313	0.00362322	0.00002415	0.0000000006
12	**28-Jan-04**	8,428.571429	-0.002035350	0.00000414	0.00001043	0.00322989	-0.00000899	0.0000000001
13	**29-Jan-04**	8,441.592117	0.001543635	0.00000238	0.00000802	0.00283150	-0.00000805	0.0000000001
14	**30-Jan-04**	8,452.380952	0.001277241	0.00000163	0.00000610	0.00247014	-0.00000639	0.0000000000
15	**02-Feb-04**	8,459.619173	0.000855986	0.00000073	0.00000449	0.00211918	-0.00000537	0.0000000000
16	**03-Feb-04**	8,452.130458	-0.000885623	0.00000078	0.00000338	0.00183819	-0.00000371	0.0000000000
17	**04-Feb-04**	8,437.459070	-0.001737330	0.00000302	0.00000327	0.00180852	-0.00000036	0.0000000000
18	**05-Feb-04**	8,458.607096	0.002503309	0.00000627	0.00000417	0.00204193	0.00000300	0.0000000000
19	**06-Feb-04**	8,455.593398	-0.000356351	0.00000013	0.00000296	0.00171952	-0.00000404	0.0000000000
20	**09-Feb-04**	8,446.276733	-0.001102442	0.00000122	0.00000243	0.00156023	-0.00000174	0.0000000000
21	**10-Feb-04**	8,418.688230	-0.003271697	0.00001070	0.00000492	0.00221703	0.00000827	0.0000000001
22	**11-Feb-04**	8,399.179066	-0.002320053	0.00000538	0.00000506	0.00224843	0.00000047	0.0000000000
23	**12-Feb-04**	8,400.457375	0.000152183	0.00000002	0.00000355	0.00188302	-0.00000503	0.0000000000
24	**13-Feb-04**	8,418.057663	0.002092967	0.00000438	0.00000380	0.00194838	0.00000083	0.0000000000
25	**16-Feb-04**	8,396.608454	-0.002551252	0.00000651	0.00000461	0.00214709	0.00000271	0.0000000000
26	**17-Feb-04**	8,397.629854	0.000121637	0.00000001	0.00000323	0.00179762	-0.00000460	0.0000000000
27	**18-Feb-04**	8,400.652283	0.000359850	0.00000013	0.00000230	0.00151686	-0.00000310	0.0000000000
28	**19-Feb-04**	8,422.446406	0.002590978	0.00000671	0.00000362	0.00190382	0.00000441	0.0000000000
29	**20-Feb-04**	8,424.857324	0.000286208	0.00000008	0.00000256	0.00160055	-0.00000354	0.0000000000
30	**23-Feb-04**	8,439.642903	0.001753456	0.00000307	0.00000272	0.00164791	0.00000051	0.0000000000
31	**24-Feb-04**	8,454.368932	0.001743343	0.00000304	0.00000281	0.00167711	0.00000032	0.0000000000
32	**25-Feb-04**	8,437.780341	-0.001964060	0.00000386	0.00000313	0.00176809	0.00000104	0.0000000000
33	**26-Feb-04**	8,446.514034	0.001034535	0.00000107	0.00000251	0.00158410	-0.00000206	0.0000000000
34	**27-Feb-04**	8,462.636222	0.001906919	0.00000364	0.00000285	0.00168745	0.00000113	0.0000000000
35	**01-Mar-04**	8,448.030988	-0.001727340	0.00000298	0.00000289	0.00169951	0.00000014	0.0000000000
36	**02-Mar-04**	8,471.395289	0.002761833	0.00000763	0.00000431	0.00207609	0.00000474	0.0000000000
37	**03-Mar-04**	8,544.994675	0.008650465	0.00007483	0.00002547	0.00504641	0.00007052	0.0000000050
38	**04-Mar-04**	8,540.447046	-0.000532340	0.00000028	0.00001791	0.00423219	-0.00002518	0.0000000006
39	**05-Mar-04**	8,589.692369	0.005749569	0.00003306	0.00002246	0.00473870	0.00001515	0.0000000002
40	**08-Mar-04**	8,592.925026	0.000376271	0.00000014	0.00001576	0.00397003	-0.00002231	0.0000000005
41	**09-Mar-04**	8,536.457652	-0.006593066	0.00004347	0.00002407	0.00490646	0.00002771	0.0000000008
42	**10-Mar-04**	8,569.729015	0.003889985	0.00001513	0.00002139	0.00462503	-0.00000894	0.0000000001
43	**11-Mar-04**	8,630.303030	0.007043506	0.00004961	0.00002986	0.00546415	0.00002822	0.0000000008
44	**12-Mar-04**	8,635.365184	0.000586384	0.00000034	0.00002100	0.00458291	-0.00002951	0.0000000009
45	**15-Mar-04**	8,642.681930	0.000846941	0.00000072	0.00001492	0.00386229	-0.00002029	0.0000000004
46	**16-Mar-04**	8,616.804669	-0.002998615	0.00000899	0.00001314	0.00362486	-0.00000593	0.0000000000
47	**17-Mar-04**	8,565.275908	-0.005997983	0.00003598	0.00001999	0.00447107	0.00002284	0.0000000005
48	**18-Mar-04**	8,538.255034	-0.003159686	0.00000998	0.00001699	0.00412170	-0.00001001	0.0000000001
49	**19-Mar-04**	8,565.321934	0.003165060	0.00001002	0.00001490	0.00385969	-0.00000697	0.0000000000
50	**22-Mar-04**	8,561.836981	-0.000406951	0.00000017	0.00001048	0.00323693	-0.00001473	0.0000000002
51	**23-Mar-04**	8,588.110403	0.003063968	0.00000939	0.00001015	0.00318603	-0.00000109	0.0000000000
52	**24-Mar-04**	8,581.692390	-0.000747593	0.00000056	0.00000727	0.00269689	-0.00000959	0.0000000001
53	**25-Mar-04**	8,624.630277	0.004990953	0.00002491	0.00001256	0.00354459	0.00001764	0.0000000003
54	**26-Mar-04**	8,639.740646	0.001750469	0.00000306	0.00000971	0.00311675	-0.00000950	0.0000000001

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
55	**29-Mar-04**	8,605.369128	-0.003986239	0.00001589	0.00001157	0.00340102	0.00000618	0.0000000000
56	**30-Mar-04**	8,603.225377	-0.000249149	0.00000006	0.00000812	0.00284877	-0.00001150	0.0000000001
57	**31-Mar-04**	8,583.476084	-0.002298207	0.00000528	0.00000727	0.00269543	-0.00000283	0.0000000000
58	**01-Apr-04**	8,573.116303	-0.001207674	0.00000146	0.00000552	0.00235017	-0.00000581	0.0000000000
59	**02-Apr-04**	8,603.556485	0.003544367	0.00001256	0.00000764	0.00276316	0.00000704	0.0000000000
60	**05-Apr-04**	8,579.725449	-0.002773749	0.00000769	0.00000765	0.00276634	0.00000006	0.0000000000
61	**06-Apr-04**	8,579.590752	-0.000015700	0.00000000	0.00000536	0.00231450	-0.00000765	0.0000000001
62	**07-Apr-04**	8,584.607275	0.000584533	0.00000034	0.00000385	0.00196274	-0.00000502	0.0000000000
63	**08-Apr-04**	8,588.572919	0.000461842	0.00000021	0.00000276	0.00166152	-0.00000364	0.0000000000
64	**13-Apr-04**	8,575.153174	-0.001563734	0.00000245	0.00000267	0.00163280	-0.00000032	0.0000000000
65	**14-Apr-04**	8,604.118993	0.003372186	0.00001137	0.00000528	0.00229733	0.00000871	0.0000000001
66	**15-Apr-04**	8,629.021311	0.002890052	0.00000835	0.00000620	0.00249000	0.00000307	0.0000000000
67	**16-Apr-04**	8,627.054702	-0.000227932	0.00000005	0.00000436	0.00208702	-0.00000615	0.0000000000
68	**19-Apr-04**	8,600.856073	-0.003041419	0.00000925	0.00000582	0.00241330	0.00000489	0.0000000000
69	**20-Apr-04**	8,610.398379	0.001108845	0.00000123	0.00000445	0.00210848	-0.00000459	0.0000000000
70	**21-Apr-04**	8,637.482900	0.003140623	0.00000986	0.00000607	0.00246395	0.00000542	0.0000000000
71	**22-Apr-04**	8,648.204003	0.001240460	0.00000154	0.00000471	0.00217056	-0.00000453	0.0000000000
72	**23-Apr-04**	8,630.547237	-0.002043756	0.00000418	0.00000455	0.00213331	-0.00000053	0.0000000000
73	**27-Apr-04**	8,623.790707	-0.000783169	0.00000061	0.00000337	0.00183568	-0.00000394	0.0000000000
74	**28-Apr-04**	8,637.605903	0.001600705	0.00000256	0.00000313	0.00176847	-0.00000081	0.0000000000
75	**29-Apr-04**	8,659.980499	0.002587021	0.00000669	0.00000420	0.00204867	0.00000357	0.0000000000
76	**30-Apr-04**	8,689.750693	0.003431779	0.00001178	0.00000647	0.00254383	0.00000758	0.0000000001
77	**03-May-04**	8,704.447832	0.001689890	0.00000286	0.00000539	0.00232088	-0.00000362	0.0000000000
78	**04-May-04**	8,711.240310	0.000780041	0.00000061	0.00000395	0.00198823	-0.00000478	0.0000000000
79	**05-May-04**	8,710.868079	-0.000042731	0.00000000	0.00000277	0.00166364	-0.00000395	0.0000000000
80	**06-May-04**	8,696.484749	-0.001652558	0.00000273	0.00000276	0.00166032	-0.00000004	0.0000000000
81	**07-May-04**	8,729.805014	0.003824142	0.00001462	0.00000632	0.00251334	0.00001187	0.0000000001
82	**10-May-04**	8,835.076659	0.011986748	0.00014368	0.00004753	0.00689394	0.00013737	0.0000000189
83	**11-May-04**	8,970.271435	0.015186153	0.00023062	0.00010245	0.01012197	0.00018309	0.0000000335
84	**12-May-04**	8,943.310010	-0.003010168	0.00000906	0.00007444	0.00862765	-0.00009339	0.0000000087
85	**13-May-04**	9,008.097166	0.007218090	0.00005210	0.00006774	0.00823017	-0.00002234	0.0000000005
86	**14-May-04**	9,055.095217	0.005203749	0.00002708	0.00005554	0.00745243	-0.00004066	0.0000000017
87	**17-May-04**	8,992.359810	-0.006952300	0.00004833	0.00005338	0.00730599	-0.00000720	0.0000000001
88	**18-May-04**	9,078.138718	0.009493878	0.00009013	0.00006440	0.00802523	0.00003676	0.0000000014
89	**19-May-04**	9,057.877352	-0.002234380	0.00000499	0.00004658	0.00682501	-0.00005941	0.0000000035
90	**20-May-04**	9,049.682265	-0.000905157	0.00000082	0.00003285	0.00573169	-0.00004576	0.0000000021
91	**21-May-04**	9,074.153450	0.002700444	0.00000729	0.00002518	0.00501840	-0.00002556	0.0000000007
92	**24-May-04**	9,086.469405	0.001356336	0.00000184	0.00001818	0.00426391	-0.00002334	0.0000000005
93	**25-May-04**	9,308.571429	0.024149206	0.00058318	0.00018768	0.01369970	0.00056500	0.0000003192
94	**26-May-04**	9,290.349887	-0.001959420	0.00000384	0.00013253	0.01151213	-0.00018384	0.0000000338
95	**27-May-04**	9,310.199494	0.002134304	0.00000456	0.00009414	0.00970242	-0.00012797	0.0000000164
96	**28-May-04**	9,289.191821	-0.002258964	0.00000510	0.00006743	0.00821138	-0.00008903	0.0000000079
97	**31-May-04**	9,263.614728	-0.002757223	0.00000760	0.00004948	0.00703416	-0.00005982	0.0000000036
98	**01-Jun-04**	9,364.525140	0.010834297	0.00011738	0.00006985	0.00835764	0.00006790	0.0000000046
99	**02-Jun-04**	9,575.278679	0.022256011	0.00049533	0.00019749	0.01405326	0.00042548	0.0000001810
100	**03-Jun-04**	9,461.371841	-0.011967252	0.00014322	0.00018121	0.01346144	-0.00005428	0.0000000029
101	**04-Jun-04**	9,467.361413	0.000632855	0.00000040	0.00012697	0.01126798	-0.00018081	0.0000000327
102	**07-Jun-04**	9,338.949172	-0.013656505	0.00018650	0.00014483	0.01203442	0.00005953	0.0000000035
103	**08-Jun-04**	9,289.772727	-0.005279649	0.00002787	0.00010974	0.01047576	-0.00011695	0.0000000137
104	**09-Jun-04**	9,279.770445	-0.001077278	0.00000116	0.00007717	0.00878449	-0.00010858	0.0000000118
105	**10-Jun-04**	9,380.249059	0.010769505	0.00011598	0.00008881	0.00942400	0.00003882	0.0000000015
106	**11-Jun-04**	9,380.314166	0.000006941	0.00000000	0.00006217	0.00788468	-0.00008881	0.0000000079
107	**15-Jun-04**	9,398.276617	0.001913078	0.00000366	0.00004462	0.00667950	-0.00005851	0.0000000034
108	**16-Jun-04**	9,393.459156	-0.000512721	0.00000026	0.00003131	0.00559552	-0.00004435	0.0000000020
109	**17-Jun-04**	9,403.421553	0.001060005	0.00000112	0.00002225	0.00471741	-0.00003019	0.0000000009
110	**18-Jun-04**	9,407.537762	0.000437639	0.00000019	0.00001564	0.00395414	-0.00002206	0.0000000005
111	**21-Jun-04**	9,389.800959	-0.001887162	0.00000356	0.00001201	0.00346599	-0.00001207	0.0000000001
112	**22-Jun-04**	9,412.878788	0.002454740	0.00000603	0.00001022	0.00319639	-0.00000599	0.0000000000
113	**23-Jun-04**	9,424.637681	0.001248455	0.00000156	0.00000762	0.00276033	-0.00000866	0.0000000001
114	**24-Jun-04**	9,432.840151	0.000869944	0.00000076	0.00000556	0.00235810	-0.00000686	0.0000000000
115	**25-Jun-04**	9,423.104384	-0.001032647	0.00000107	0.00000421	0.00205240	-0.00000449	0.0000000000
116	**28-Jun-04**	9,411.257898	-0.001257965	0.00000158	0.00000342	0.00185024	-0.00000263	0.0000000000

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
117	**29-Jun-04**	9,425.303788	0.001491344	0.00000222	0.00000306	0.00175031	-0.00000120	0.0000000000
118	**30-Jun-04**	9,412.106256	-0.001401205	0.00000196	0.00000273	0.00165334	-0.00000110	0.0000000000
119	**01-Jul-04**	9,385.187303	-0.002864133	0.00000820	0.00000437	0.00209152	0.00000547	0.0000000000
120	**02-Jul-04**	9,258.312020	-0.013610883	0.00018526	0.00005864	0.00765761	0.00018088	0.0000000327
121	**05-Jul-04**	9,129.520606	-0.014008559	0.00019624	0.00009992	0.00999596	0.00013760	0.0000000189
122	**06-Jul-04**	8,969.891274	-0.017639631	0.00031116	0.00016329	0.01277851	0.00021124	0.0000000446
123	**07-Jul-04**	9,024.492068	0.006068667	0.00003683	0.00012535	0.01119607	-0.00012646	0.0000000160
124	**08-Jul-04**	9,006.512401	-0.001994306	0.00000398	0.00008894	0.00943077	-0.00012137	0.0000000147
125	**09-Jul-04**	8,979.958535	-0.002952651	0.00000872	0.00006487	0.00805438	-0.00008022	0.0000000064
126	**12-Jul-04**	8,807.617996	-0.019378236	0.00037552	0.00015807	0.01257243	0.00031064	0.0000000965
127	**13-Jul-04**	8,910.194510	0.011579043	0.00013407	0.00015087	0.01228285	-0.00002399	0.0000000006
128	**14-Jul-04**	8,969.128997	0.006592498	0.00004346	0.00011865	0.01089249	-0.00010741	0.0000000115
129	**15-Jul-04**	9,000.000000	0.003436008	0.00001181	0.00008659	0.00930560	-0.00010684	0.0000000114
130	**16-Jul-04**	8,909.467865	-0.010110061	0.00010221	0.00009128	0.00955405	0.00001562	0.0000000002
131	**19-Jul-04**	8,887.375732	-0.002482704	0.00000616	0.00006575	0.00810834	-0.00008512	0.0000000072
132	**20-Jul-04**	8,962.638566	0.008432854	0.00007111	0.00006736	0.00820704	0.00000537	0.0000000000
133	**21-Jul-04**	8,982.233852	0.002183944	0.00000477	0.00004858	0.00696992	-0.00006259	0.0000000039
134	**22-Jul-04**	9,090.271937	0.011956214	0.00014295	0.00007689	0.00876876	0.00009437	0.0000000089
135	**23-Jul-04**	9,018.370495	-0.007941161	0.00006306	0.00007274	0.00852892	-0.00001383	0.0000000002
136	**26-Jul-04**	9,088.483146	0.007744361	0.00005998	0.00006891	0.00830134	-0.00001277	0.0000000002
137	**27-Jul-04**	9,124.508151	0.003955973	0.00001565	0.00005293	0.00727554	-0.00005326	0.0000000028
138	**28-Jul-04**	9,120.581528	-0.000430431	0.00000019	0.00003711	0.00609172	-0.00005275	0.0000000028
139	**29-Jul-04**	9,159.988552	0.004311363	0.00001859	0.00003155	0.00561718	-0.00001852	0.0000000003
140	**30-Jul-04**	9,182.651016	0.002471016	0.00000611	0.00002392	0.00489067	-0.00002545	0.0000000006
141	**03-Aug-04**	9,164.408955	-0.001988555	0.00000395	0.00001793	0.00423431	-0.00001996	0.0000000004
142	**04-Aug-04**	9,232.740214	0.007428496	0.00005518	0.00002911	0.00539493	0.00003725	0.0000000014
143	**05-Aug-04**	9,185.584563	-0.005120526	0.00002622	0.00002824	0.00531410	-0.00000289	0.0000000000
144	**06-Aug-04**	9,202.898551	0.001883134	0.00000355	0.00002083	0.00456417	-0.00002469	0.0000000006
145	**09-Aug-04**	9,164.921100	-0.004135222	0.00001710	0.00001971	0.00443984	-0.00000373	0.0000000000
146	**10-Aug-04**	9,198.601399	0.003668178	0.00001346	0.00001784	0.00422317	-0.00000626	0.0000000000
147	**11-Aug-04**	9,229.797980	0.003385710	0.00001146	0.00001592	0.00399043	-0.00000637	0.0000000000
148	**12-Aug-04**	9,260.607758	0.003332518	0.00001111	0.00001448	0.00380502	-0.00000482	0.0000000000
149	**13-Aug-04**	9,288.543140	0.003012041	0.00000907	0.00001286	0.00358559	-0.00000541	0.0000000000
150	**16-Aug-04**	9,270.062805	-0.001991566	0.00000397	0.00001019	0.00319208	-0.00000889	0.0000000001
151	**17-Aug-04**	9,284.919310	0.001601350	0.00000256	0.00000790	0.00281103	-0.00000763	0.0000000001
152	**18-Aug-04**	9,285.115889	0.000021172	0.00000000	0.00000553	0.00235190	-0.00000790	0.0000000001
153	**19-Aug-04**	9,272.320179	-0.001379039	0.00000190	0.00000444	0.00210773	-0.00000363	0.0000000000
154	**20-Aug-04**	9,278.620690	0.000679266	0.00000046	0.00000325	0.00180228	-0.00000398	0.0000000000
155	**23-Aug-04**	9,255.363322	-0.002509701	0.00000630	0.00000416	0.00204042	0.00000305	0.0000000000
156	**24-Aug-04**	9,257.543860	0.000235569	0.00000006	0.00000293	0.00171201	-0.00000411	0.0000000000
157	**25-Aug-04**	9,279.445074	0.002362975	0.00000558	0.00000373	0.00193049	0.00000265	0.0000000000
158	**26-Aug-04**	9,297.772734	0.001973134	0.00000389	0.00000378	0.00194338	0.00000017	0.0000000000
159	**27-Aug-04**	9,293.701345	-0.000437985	0.00000019	0.00000270	0.00164355	-0.00000358	0.0000000000
160	**30-Aug-04**	9,308.167073	0.001555299	0.00000242	0.00000262	0.00161758	-0.00000028	0.0000000000
161	**31-Aug-04**	9,333.903865	0.002761153	0.00000762	0.00000412	0.00202948	0.00000501	0.0000000000
162	**01-Sep-04**	9,372.782744	0.004156689	0.00001728	0.00000807	0.00284017	0.00001316	0.0000000002
163	**02-Sep-04**	9,322.953864	-0.005330520	0.00002841	0.00001417	0.00376443	0.00002035	0.0000000004
164	**03-Sep-04**	9,280.286738	-0.004587072	0.00002104	0.00001623	0.00402890	0.00000687	0.0000000000
165	**06-Sep-04**	9,290.052053	0.001051711	0.00000111	0.00001169	0.00341968	-0.00001513	0.0000000002
166	**07-Sep-04**	9,282.213894	-0.000844071	0.00000071	0.00000840	0.00289822	-0.00001098	0.0000000001
167	**08-Sep-04**	9,259.527605	-0.002447052	0.00000599	0.00000768	0.00277060	-0.00000241	0.0000000000
168	**09-Sep-04**	9,379.956741	0.012922118	0.00016698	0.00005547	0.00744766	0.00015930	0.0000000254
169	**10-Sep-04**	9,295.672379	-0.009026195	0.00008147	0.00006327	0.00795418	0.00002600	0.0000000007
170	**13-Sep-04**	9,276.485788	-0.002066168	0.00000427	0.00004557	0.00675048	-0.00005900	0.0000000035
171	**14-Sep-04**	9,161.659514	-0.012455457	0.00015514	0.00007844	0.00885663	0.00010957	0.0000000120
172	**15-Sep-04**	9,085.706110	-0.008324910	0.00006930	0.00007570	0.00870053	-0.00000914	0.0000000001
173	**16-Sep-04**	9,093.264249	0.000831526	0.00000069	0.00005320	0.00729362	-0.00007501	0.0000000056
174	**17-Sep-04**	9,026.624678	-0.007355439	0.00005410	0.00005347	0.00731222	0.00000091	0.0000000000
175	**20-Sep-04**	9,041.624946	0.001660401	0.00000276	0.00003826	0.00618507	-0.00005071	0.0000000026
176	**21-Sep-04**	8,985.859163	-0.006186771	0.00003828	0.00003826	0.00618558	0.00000002	0.0000000000
177	**22-Sep-04**	9,110.385925	0.013762936	0.00018942	0.00008361	0.00914377	0.00015116	0.0000000228
178	**23-Sep-04**	9,155.128567	0.004899148	0.00002400	0.00006573	0.00810718	-0.00005961	0.0000000036

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
179	**24-Sep-04**	9,109.271988	-0.005021427	0.00002521	0.00005357	0.00731935	-0.00004051	0.0000000016
180	**27-Sep-04**	9,187.517571	0.008552982	0.00007315	0.00005945	0.00771019	0.00001958	0.0000000004
181	**28-Sep-04**	9,206.438069	0.002057252	0.00000423	0.00004288	0.00654848	-0.00005521	0.0000000030
182	**29-Sep-04**	9,197.487788	-0.000972649	0.00000095	0.00003030	0.00550470	-0.00004194	0.0000000018
183	**30-Sep-04**	9,175.877991	-0.002352297	0.00000553	0.00002287	0.00478238	-0.00002477	0.0000000006
184	**01-Oct-04**	9,143.840330	-0.003497619	0.00001223	0.00001968	0.00443619	-0.00001064	0.0000000001
185	**04-Oct-04**	9,143.840330	0.000000000	0.00000000	0.00001378	0.00371159	-0.00001968	0.0000000004
186	**05-Oct-04**	9,074.151074	-0.007650634	0.00005853	0.00002720	0.00521563	0.00004476	0.0000000020
187	**06-Oct-04**	9,093.292851	0.002107262	0.00000444	0.00002037	0.00451377	-0.00002276	0.0000000005
188	**07-Oct-04**	9,101.573282	0.000910194	0.00000083	0.00001451	0.00380925	-0.00001955	0.0000000004
189	**08-Oct-04**	9,084.913438	-0.001832113	0.00000336	0.00001116	0.00334130	-0.00001115	0.0000000001
190	**11-Oct-04**	9,070.591442	-0.001577703	0.00000249	0.00000856	0.00292604	-0.00000868	0.0000000001
191	**12-Oct-04**	9,118.250171	0.005240448	0.00002746	0.00001423	0.00377252	0.00001890	0.0000000004
192	**13-Oct-04**	9,132.344865	0.001544574	0.00000239	0.00001068	0.00326773	-0.00001185	0.0000000001
193	**14-Oct-04**	9,134.814406	0.000270380	0.00000007	0.00000750	0.00273799	-0.00001060	0.0000000001
194	**15-Oct-04**	9,108.585513	-0.002875441	0.00000827	0.00000773	0.00277994	0.00000077	0.0000000000
195	**18-Oct-04**	9,100.109409	-0.000930995	0.00000087	0.00000567	0.00238110	-0.00000686	0.0000000000
196	**19-Oct-04**	9,118.377483	0.002005444	0.00000402	0.00000518	0.00227493	-0.00000165	0.0000000000
197	**20-Oct-04**	9,076.288660	-0.004626510	0.00002140	0.00001004	0.00316924	0.00001623	0.0000000003
198	**21-Oct-04**	9,105.470341	0.003209998	0.00001030	0.00001012	0.00318152	0.00000026	0.0000000000
199	**22-Oct-04**	9,094.365241	-0.001220352	0.00000149	0.00000753	0.00274449	-0.00000863	0.0000000001
200	**25-Oct-04**	9,078.576226	-0.001737640	0.00000302	0.00000618	0.00248564	-0.00000451	0.0000000000
201	**26-Oct-04**	9,078.384163	-0.000021156	0.00000000	0.00000433	0.00207966	-0.00000618	0.0000000000
202	**27-Oct-04**	9,102.495305	0.002652364	0.00000704	0.00000514	0.00226672	0.00000271	0.0000000000
203	**28-Oct-04**	9,089.087752	-0.001474039	0.00000217	0.00000425	0.00206118	-0.00000297	0.0000000000
204	**29-Oct-04**	9,088.594022	-0.000054323	0.00000000	0.00000297	0.00172476	-0.00000425	0.0000000000
205	**01-Nov-04**	9,086.043088	-0.000280714	0.00000008	0.00000211	0.00145121	-0.00000290	0.0000000000
206	**02-Nov-04**	9,092.495637	0.000709908	0.00000050	0.00000163	0.00127491	-0.00000160	0.0000000000
207	**03-Nov-04**	9,112.481566	0.002195656	0.00000482	0.00000258	0.00160750	0.00000320	0.0000000000
208	**04-Nov-04**	9,107.615019	-0.000534196	0.00000029	0.00000189	0.00137639	-0.00000230	0.0000000000
209	**05-Nov-04**	9,059.693608	-0.005275577	0.00002783	0.00000968	0.00311057	0.00002594	0.0000000007
210	**08-Nov-04**	9,004.602235	-0.006099495	0.00003720	0.00001793	0.00423487	0.00002753	0.0000000008
211	**09-Nov-04**	9,004.626570	0.000002702	0.00000000	0.00001255	0.00354314	-0.00001793	0.0000000003
212	**10-Nov-04**	9,042.357274	0.004181392	0.00001748	0.00001403	0.00374605	0.00000493	0.0000000000
213	**11-Nov-04**	9,079.657670	0.004116589	0.00001695	0.00001491	0.00386095	0.00000291	0.0000000000
214	**12-Nov-04**	9,058.577406	-0.002324402	0.00000540	0.00001206	0.00347213	-0.00000950	0.0000000001
215	**15-Nov-04**	9,044.834308	-0.001518288	0.00000231	0.00000913	0.00302168	-0.00000975	0.0000000001
216	**16-Nov-04**	9,044.652129	-0.000020142	0.00000000	0.00000639	0.00252814	-0.00000913	0.0000000001
217	**17-Nov-04**	9,044.725957	0.000008163	0.00000000	0.00000447	0.00211520	-0.00000639	0.0000000000
218	**18-Nov-04**	9,045.547595	0.000090838	0.00000001	0.00000313	0.00177040	-0.00000447	0.0000000000
219	**19-Nov-04**	9,044.487427	-0.000117210	0.00000001	0.00000220	0.00148262	-0.00000312	0.0000000000
220	**22-Nov-04**	8,989.769821	-0.006068204	0.00003682	0.00001259	0.00354762	0.00003462	0.0000000012
221	**23-Nov-04**	9,021.948402	0.003573076	0.00001277	0.00001264	0.00355528	0.00000018	0.0000000000
222	**24-Nov-04**	8,993.382540	-0.003171286	0.00001006	0.00001187	0.00344458	-0.00000258	0.0000000000
223	**25-Nov-04**	8,964.158617	-0.003254783	0.00001059	0.00001148	0.00338876	-0.00000127	0.0000000000
224	**26-Nov-04**	8,961.824367	-0.000260432	0.00000007	0.00000806	0.00283882	-0.00001142	0.0000000001
225	**29-Nov-04**	8,997.076395	0.003925861	0.00001541	0.00001026	0.00320390	0.00000735	0.0000000001
226	**30-Nov-04**	9,017.363344	0.002252300	0.00000507	0.00000871	0.00295082	-0.00000519	0.0000000000
227	**01-Dec-04**	9,015.063731	-0.000255053	0.00000007	0.00000611	0.00247278	-0.00000864	0.0000000001
228	**02-Dec-04**	9,021.140295	0.000673818	0.00000045	0.00000442	0.00210154	-0.00000566	0.0000000000
229	**03-Dec-04**	9,052.414149	0.003460734	0.00001198	0.00000668	0.00258545	0.00000756	0.0000000001
230	**06-Dec-04**	9,046.948957	-0.000603910	0.00000036	0.00000479	0.00218828	-0.00000632	0.0000000000
231	**07-Dec-04**	9,073.597530	0.002941257	0.00000865	0.00000595	0.00243871	0.00000386	0.0000000000
232	**08-Dec-04**	9,139.686684	0.007257279	0.00005267	0.00001996	0.00446806	0.00004672	0.0000000022
233	**09-Dec-04**	9,173.041414	0.003642796	0.00001327	0.00001796	0.00423739	-0.00000669	0.0000000000
234	**10-Dec-04**	9,198.615548	0.002784088	0.00000775	0.00001489	0.00385930	-0.00001020	0.0000000001
235	**13-Dec-04**	9,236.590547	0.004119840	0.00001697	0.00001552	0.00393927	0.00000208	0.0000000000
236	**14-Dec-04**	9,299.723575	0.006811847	0.00004640	0.00002478	0.00497824	0.00003088	0.0000000010
237	**15-Dec-04**	9,348.572939	0.005239028	0.00002745	0.00002558	0.00505789	0.00000266	0.0000000000
238	**16-Dec-04**	9,239.712606	-0.011712923	0.00013719	0.00005907	0.00768540	0.00011161	0.0000000125
239	**17-Dec-04**	9,318.450427	0.008485570	0.00007200	0.00006295	0.00793393	0.00001294	0.0000000002
240	**20-Dec-04**	9,320.146712	0.000182019	0.00000003	0.00004407	0.00663875	-0.00006291	0.0000000040

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241	**21-Dec-04**	9,320.198330	0.000005538	0.00000000	0.00003085	0.00555438	-0.00004407	0.0000000019
242	**22-Dec-04**	9,327.830189	0.000818516	0.00000067	0.00002180	0.00466870	-0.00003018	0.0000000009
243	**23-Dec-04**	9,317.143230	-0.001146364	0.00000131	0.00001565	0.00395626	-0.00002048	0.0000000004
244	**24-Dec-04**	9,265.338023	-0.005575718	0.00003109	0.00002028	0.00450366	0.00001544	0.0000000002
245	**29-Dec-04**	9,327.515400	0.006688334	0.00004473	0.00002762	0.00525530	0.00002445	0.0000000006
246	**30-Dec-04**	9,367.986586	0.004329517	0.00001874	0.00002496	0.00499562	-0.00000887	0.0000000001
247	**31-Dec-04**	9,309.370988	-0.006276668	0.00003940	0.00002929	0.00541187	0.00001444	0.0000000002
248	**04-Jan-05**	9,279.661017	-0.003196508	0.00001022	0.00002357	0.00485460	-0.00001907	0.0000000004
249	**05-Jan-05**	9,308.315900	0.003083166	0.00000951	0.00001935	0.00439872	-0.00001406	0.0000000002
250	**06-Jan-05**	9,278.512505	-0.003206940	0.00001028	0.00001663	0.00407792	-0.00000906	0.0000000001
251	**07-Jan-05**	9,290.491803	0.001290247	0.00000166	0.00001214	0.00348426	-0.00001496	0.0000000002
252	**10-Jan-05**	9,298.430700	0.000854154	0.00000073	0.00000872	0.00295244	-0.00001141	0.0000000001
253	**11-Jan-05**	9,282.240042	-0.001742742	0.00000304	0.00000701	0.00264820	-0.00000568	0.0000000000
254	**12-Jan-05**	9,257.067719	-0.002715564	0.00000737	0.00000712	0.00266859	0.00000036	0.0000000000
255	**13-Jan-05**	9,151.878914	-0.011428133	0.00013060	0.00004417	0.00664572	0.00012348	0.0000000152
256	**14-Jan-05**	9,170.069820	0.001985696	0.00000394	0.00003210	0.00566558	-0.00004022	0.0000000016
257	**17-Jan-05**	9,145.636172	-0.002668056	0.00000712	0.00002460	0.00496032	-0.00002498	0.0000000006
258	**18-Jan-05**	9,155.154091	0.001040165	0.00000108	0.00001755	0.00418902	-0.00002352	0.0000000006
259	**19-Jan-05**	9,154.557464	-0.000065171	0.00000000	0.00001228	0.00350497	-0.00001754	0.0000000003
260	**20-Jan-05**	9,156.484036	0.000210427	0.00000004	0.00000861	0.00293473	-0.00001224	0.0000000001
261	**21-Jan-05**	9,160.728424	0.000463432	0.00000021	0.00000609	0.00246846	-0.00000840	0.0000000001
262	**24-Jan-05**	9,151.507277	-0.001007102	0.00000101	0.00000457	0.00213766	-0.00000508	0.0000000000
263	**25-Jan-05**	9,131.394443	-0.002200180	0.00000484	0.00000465	0.00215660	0.00000027	0.0000000000
264	**26-Jan-05**	9,131.394443	0.000000000	0.00000000	0.00000326	0.00180434	-0.00000465	0.0000000000
265	**27-Jan-05**	9,139.507922	0.000888131	0.00000079	0.00000252	0.00158606	-0.00000247	0.0000000000
266	**28-Jan-05**	9,144.847156	0.000584022	0.00000034	0.00000186	0.00136501	-0.00000217	0.0000000000
267	**31-Jan-05**	9,160.640496	0.001725531	0.00000298	0.00000220	0.00148240	0.00000111	0.0000000000
268	**01-Feb-05**	9,183.145922	0.002453740	0.00000602	0.00000334	0.00182880	0.00000382	0.0000000000
269	**02-Feb-05**	9,222.623967	0.004289753	0.00001840	0.00000786	0.00280388	0.00001506	0.0000000002
270	**03-Feb-05**	9,208.048497	-0.001581654	0.00000250	0.00000625	0.00250074	-0.00000536	0.0000000000
271	**04-Feb-05**	9,207.483435	-0.000061368	0.00000000	0.00000438	0.00209254	-0.00000625	0.0000000000
272	**07-Feb-05**	9,207.664423	0.000019656	0.00000000	0.00000307	0.00175078	-0.00000438	0.0000000000
273	**08-Feb-05**	9,275.003260	0.007286733	0.00005310	0.00001807	0.00425142	0.00005003	0.0000000025
274	**09-Feb-05**	9,282.346778	0.000791440	0.00000063	0.00001284	0.00358331	-0.00001745	0.0000000003
275	**10-Feb-05**	9,281.575898	-0.000083051	0.00000001	0.00000899	0.00299836	-0.00001283	0.0000000002
276	**11-Feb-05**	9,279.866974	-0.000184137	0.00000003	0.00000630	0.00251063	-0.00000896	0.0000000001
277	**14-Feb-05**	9,244.682206	-0.003798722	0.00001443	0.00000874	0.00295658	0.00000813	0.0000000001
278	**15-Feb-05**	9,259.495284	0.001601053	0.00000256	0.00000689	0.00262450	-0.00000618	0.0000000000
279	**16-Feb-05**	9,268.819939	0.001006530	0.00000101	0.00000513	0.00226396	-0.00000587	0.0000000000
280	**17-Feb-05**	9,295.451650	0.002869138	0.00000823	0.00000606	0.00246119	0.00000311	0.0000000000
281	**18-Feb-05**	9,288.900217	-0.000705048	0.00000050	0.00000439	0.00209508	-0.00000556	0.0000000000
282	**21-Feb-05**	9,273.835216	-0.001623145	0.00000263	0.00000386	0.00196543	-0.00000175	0.0000000000
283	**22-Feb-05**	9,256.166983	-0.001906987	0.00000364	0.00000380	0.00194808	-0.00000023	0.0000000000
284	**23-Feb-05**	9,244.450050	-0.001266653	0.00000160	0.00000314	0.00177139	-0.00000219	0.0000000000
285	**24-Feb-05**	9,262.690355	0.001971165	0.00000389	0.00000336	0.00183361	0.00000075	0.0000000000
286	**25-Feb-05**	9,263.881814	0.000128622	0.00000002	0.00000236	0.00153573	-0.00000335	0.0000000000
287	**28-Feb-05**	9,265.022138	0.000123086	0.00000002	0.00000166	0.00128665	-0.00000234	0.0000000000
288	**01-Mar-05**	9,252.764011	-0.001323930	0.00000175	0.00000168	0.00129795	0.00000010	0.0000000000
289	**02-Mar-05**	9,283.524904	0.003318995	0.00001102	0.00000448	0.00211754	0.00000933	0.0000000001
290	**03-Mar-05**	9,284.983372	0.000157090	0.00000002	0.00000315	0.00177375	-0.00000446	0.0000000000
291	**04-Mar-05**	9,339.381549	0.005841631	0.00003412	0.00001244	0.00352700	0.00003098	0.0000000010
292	**07-Mar-05**	9,337.723186	-0.000177582	0.00000003	0.00000872	0.00295250	-0.00001241	0.0000000002
293	**08-Mar-05**	9,350.403633	0.001357059	0.00000184	0.00000665	0.00257965	-0.00000688	0.0000000000
294	**09-Mar-05**	9,377.744323	0.002919745	0.00000852	0.00000722	0.00268620	0.00000187	0.0000000000
295	**10-Mar-05**	9,360.552764	-0.001834912	0.00000337	0.00000606	0.00246192	-0.00000385	0.0000000000
296	**11-Mar-05**	9,364.476516	0.000419092	0.00000018	0.00000430	0.00207254	-0.00000589	0.0000000000
297	**14-Mar-05**	9,390.843738	0.002811708	0.00000791	0.00000538	0.00231916	0.00000361	0.0000000000
298	**15-Mar-05**	9,367.874335	-0.002448932	0.00000600	0.00000556	0.00235884	0.00000062	0.0000000000
299	**16-Mar-05**	9,358.309075	-0.001021592	0.00000104	0.00000421	0.00205134	-0.00000452	0.0000000000
300	**17-Mar-05**	9,360.333081	0.000216256	0.00000005	0.00000296	0.00172036	-0.00000416	0.0000000000
301	**18-Mar-05**	9,374.448228	0.001506839	0.00000227	0.00000275	0.00165919	-0.00000069	0.0000000000
302	**21-Mar-05**	9,384.712571	0.001094329	0.00000120	0.00000229	0.00151205	-0.00000156	0.0000000000

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
303	**22-Mar-05**	9,408.465069	0.002527780	0.00000639	0.00000352	0.00187545	0.00000410	0.0000000000
304	**23-Mar-05**	9,387.336580	-0.002248215	0.00000505	0.00000398	0.00199461	0.00000154	0.0000000000
305	**24-Mar-05**	9,418.153607	0.003277453	0.00001074	0.00000601	0.00245101	0.00000676	0.0000000000
306	**25-Mar-05**	9,418.153607	0.000000000	0.00000000	0.00000421	0.00205066	-0.00000601	0.0000000000
307	**28-Mar-05**	9,418.153607	0.000000000	0.00000000	0.00000294	0.00171570	-0.00000421	0.0000000000
308	**29-Mar-05**	9,495.264046	0.008154091	0.00006649	0.00002201	0.00469119	0.00006355	0.0000000040
309	**30-Mar-05**	9,529.290056	0.003577066	0.00001280	0.00001924	0.00438677	-0.00000921	0.0000000001
310	**31-Mar-05**	9,489.571188	-0.004176793	0.00001745	0.00001870	0.00432485	-0.00000180	0.0000000000
311	**01-Apr-05**	9,485.122898	-0.000468866	0.00000022	0.00001316	0.00362753	-0.00001848	0.0000000003
312	**04-Apr-05**	9,480.923955	-0.000442785	0.00000020	0.00000927	0.00304468	-0.00001296	0.0000000002
313	**05-Apr-05**	9,495.556717	0.001542200	0.00000238	0.00000720	0.00268376	-0.00000689	0.0000000000
314	**06-Apr-05**	9,476.090933	-0.002052093	0.00000421	0.00000631	0.00251100	-0.00000299	0.0000000000
315	**07-Apr-05**	9,486.145440	0.001060477	0.00000112	0.00000475	0.00217967	-0.00000518	0.0000000000
316	**08-Apr-05**	9,496.412264	0.001081711	0.00000117	0.00000368	0.00191748	-0.00000358	0.0000000000
317	**11-Apr-05**	9,502.655096	0.000657173	0.00000043	0.00000270	0.00164416	-0.00000324	0.0000000000
318	**12-Apr-05**	9,487.808025	-0.001563635	0.00000244	0.00000263	0.00162042	-0.00000026	0.0000000000
319	**13-Apr-05**	9,493.377909	0.000586885	0.00000034	0.00000194	0.00139333	-0.00000228	0.0000000000
320	**14-Apr-05**	9,494.701473	0.000139410	0.00000002	0.00000136	0.00116824	-0.00000192	0.0000000000
321	**15-Apr-05**	9,543.498109	0.005126193	0.00002628	0.00000884	0.00297300	0.00002491	0.0000000006
322	**18-Apr-05**	9,569.765921	0.002748649	0.00000756	0.00000845	0.00290751	-0.00000128	0.0000000000
323	**19-Apr-05**	9,576.547231	0.000708367	0.00000050	0.00000607	0.00246334	-0.00000795	0.0000000001
324	**20-Apr-05**	9,596.586501	0.002090350	0.00000437	0.00000556	0.00235765	-0.00000170	0.0000000000
325	**21-Apr-05**	9,615.880382	0.002008476	0.00000403	0.00000510	0.00225857	-0.00000152	0.0000000000
326	**22-Apr-05**	9,674.681754	0.006096407	0.00003717	0.00001472	0.00383675	0.00003207	0.0000000010
327	**26-Apr-05**	9,755.379098	0.008306491	0.00006900	0.00003100	0.00556811	0.00005428	0.0000000029
328	**27-Apr-05**	9,580.969572	-0.018040040	0.00032544	0.00011934	0.01092408	0.00029444	0.0000000867
329	**28-Apr-05**	9,556.098816	-0.002599225	0.00000676	0.00008556	0.00924996	-0.00011258	0.0000000127
330	**29-Apr-05**	9,574.958392	0.001971619	0.00000389	0.00006106	0.00781405	-0.00008167	0.0000000067
331	**02-May-05**	9,541.143297	-0.003537869	0.00001252	0.00004650	0.00681884	-0.00004854	0.0000000024
332	**03-May-05**	9,560.963049	0.002075139	0.00000431	0.00003384	0.00581717	-0.00004219	0.0000000018
333	**04-May-05**	9,525.401929	-0.003726342	0.00001389	0.00002785	0.00527762	-0.00001995	0.0000000004
334	**05-May-05**	9,512.382908	-0.001367704	0.00000187	0.00002006	0.00447867	-0.00002598	0.0000000007
335	**06-May-05**	9,476.386037	-0.003791390	0.00001437	0.00001835	0.00428408	-0.00000568	0.0000000000
336	**09-May-05**	9,500.775996	0.002570455	0.00000661	0.00001483	0.00385091	-0.00001175	0.0000000001
337	**10-May-05**	9,488.107549	-0.001334302	0.00000178	0.00001091	0.00330375	-0.00001305	0.0000000002
338	**11-May-05**	9,455.975248	-0.003392334	0.00001151	0.00001109	0.00333057	0.00000059	0.0000000000
339	**12-May-05**	9,475.999482	0.002115389	0.00000447	0.00000911	0.00301784	-0.00000662	0.0000000000
340	**13-May-05**	9,475.611351	-0.000040960	0.00000000	0.00000638	0.00252501	-0.00000911	0.0000000001
341	**16-May-05**	9,490.605980	0.001581194	0.00000250	0.00000521	0.00228320	-0.00000388	0.0000000000
342	**17-May-05**	9,441.510430	-0.005186495	0.00002690	0.00001172	0.00342331	0.00002169	0.0000000005
343	**18-May-05**	9,439.153439	-0.000249673	0.00000006	0.00000822	0.00286741	-0.00001166	0.0000000001
344	**19-May-05**	9,445.468915	0.000668849	0.00000045	0.00000589	0.00242685	-0.00000777	0.0000000001
345	**20-May-05**	9,460.848932	0.001626972	0.00000265	0.00000492	0.00221740	-0.00000324	0.0000000000
346	**23-May-05**	9,450.099141	-0.001136886	0.00000129	0.00000383	0.00195692	-0.00000362	0.0000000000
347	**24-May-05**	9,470.155141	0.002120057	0.00000449	0.00000403	0.00200726	0.00000067	0.0000000000
348	**25-May-05**	9,466.210886	-0.000416580	0.00000017	0.00000287	0.00169482	-0.00000386	0.0000000000
349	**26-May-05**	9,517.929857	0.005448664	0.00002969	0.00001092	0.00330410	0.00002682	0.0000000007
350	**27-May-05**	9,481.374227	-0.003848107	0.00001481	0.00001208	0.00347625	0.00000389	0.0000000000
351	**30-May-05**	9,484.048838	0.000282051	0.00000008	0.00000848	0.00291254	-0.00001200	0.0000000001
352	**31-May-05**	9,506.417891	0.002355820	0.00000555	0.00000760	0.00275735	-0.00000293	0.0000000000
353	**01-Jun-05**	9,541.065997	0.003638081	0.00001324	0.00000929	0.00304841	0.00000563	0.0000000000
354	**02-Jun-05**	9,580.726740	0.004148230	0.00001721	0.00001167	0.00341574	0.00000792	0.0000000001
355	**03-Jun-05**	9,575.621364	-0.000533022	0.00000028	0.00000825	0.00287269	-0.00001138	0.0000000001
356	**06-Jun-05**	9,590.520079	0.001554691	0.00000242	0.00000650	0.00254985	-0.00000584	0.0000000000
357	**07-Jun-05**	9,567.828698	-0.002368825	0.00000561	0.00000623	0.00249692	-0.00000089	0.0000000000
358	**08-Jun-05**	9,575.465555	0.000797862	0.00000064	0.00000456	0.00213430	-0.00000560	0.0000000000
359	**09-Jun-05**	9,593.220339	0.001852478	0.00000343	0.00000422	0.00205381	-0.00000112	0.0000000000
360	**10-Jun-05**	9,610.355649	0.001784596	0.00000318	0.00000391	0.00197690	-0.00000103	0.0000000000
361	**14-Jun-05**	9,607.381233	-0.000309549	0.00000010	0.00000276	0.00166266	-0.00000381	0.0000000000
362	**15-Jun-05**	9,588.897617	-0.001925750	0.00000371	0.00000305	0.00174576	0.00000094	0.0000000000
363	**16-Jun-05**	9,627.555671	0.004023438	0.00001619	0.00000699	0.00264382	0.00001314	0.0000000002
364	**17-Jun-05**	9,636.057506	0.000882683	0.00000078	0.00000513	0.00226420	-0.00000621	0.0000000000

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365	**20-Jun-05**	9,620.529972	-0.001612699	0.00000260	0.00000437	0.00209018	-0.00000253	0.0000000000
366	**21-Jun-05**	9,655.617180	0.003640483	0.00001325	0.00000703	0.00265219	0.00000888	0.0000000001
367	**22-Jun-05**	9,655.615523	-0.000000172	0.00000000	0.00000492	0.00221898	-0.00000703	0.0000000000
368	**23-Jun-05**	9,652.599074	-0.000312452	0.00000010	0.00000348	0.00186441	-0.00000483	0.0000000000
369	**24-Jun-05**	9,646.281420	-0.000654717	0.00000043	0.00000256	0.00160056	-0.00000305	0.0000000000
370	**27-Jun-05**	9,663.417804	0.001774900	0.00000315	0.00000274	0.00165479	0.00000059	0.0000000000
371	**28-Jun-05**	9,678.469149	0.001556347	0.00000242	0.00000264	0.00162589	-0.00000032	0.0000000000
372	**29-Jun-05**	9,698.518810	0.002069431	0.00000428	0.00000314	0.00177065	0.00000164	0.0000000000
373	**30-Jun-05**	9,718.475841	0.002055626	0.00000423	0.00000346	0.00186073	0.00000109	0.0000000000
374	**01-Jul-05**	9,766.459955	0.004925262	0.00002426	0.00000970	0.00311466	0.00002080	0.0000000004
375	**04-Jul-05**	9,814.617231	0.004918766	0.00002419	0.00001405	0.00374821	0.00001449	0.0000000002
376	**05-Jul-05**	9,874.549580	0.006087869	0.00003706	0.00002095	0.00457744	0.00002301	0.0000000005
377	**06-Jul-05**	9,795.589026	-0.008028513	0.00006446	0.00003400	0.00583131	0.00004350	0.0000000019
378	**07-Jul-05**	9,824.348061	0.002931615	0.00000859	0.00002638	0.00513627	-0.00002541	0.0000000006
379	**08-Jul-05**	9,806.259314	-0.001842913	0.00000340	0.00001949	0.00441427	-0.00002298	0.0000000005
380	**11-Jul-05**	9,736.311045	-0.007158584	0.00005125	0.00002901	0.00538643	0.00003176	0.0000000010
381	**12-Jul-05**	9,769.517719	0.003404798	0.00001159	0.00002379	0.00487723	-0.00001742	0.0000000003
382	**13-Jul-05**	9,769.536424	0.000001915	0.00000000	0.00001665	0.00408058	-0.00002379	0.0000000006
383	**14-Jul-05**	9,809.688581	0.004101512	0.00001682	0.00001670	0.00408687	0.00000017	0.0000000000
384	**15-Jul-05**	9,811.119979	0.000145906	0.00000002	0.00001170	0.00342026	-0.00001668	0.0000000003
385	**18-Jul-05**	9,794.557097	-0.001689601	0.00000285	0.00000905	0.00300751	-0.00000884	0.0000000001
386	**19-Jul-05**	9,809.637913	0.001538530	0.00000237	0.00000704	0.00265362	-0.00000668	0.0000000000
387	**20-Jul-05**	9,840.467961	0.003137904	0.00000985	0.00000788	0.00280769	0.00000280	0.0000000000
388	**21-Jul-05**	9,831.357049	-0.000926291	0.00000086	0.00000578	0.00240325	-0.00000703	0.0000000000
389	**22-Jul-05**	9,774.062949	-0.005844737	0.00003416	0.00001429	0.00378037	0.00002839	0.0000000008
390	**25-Jul-05**	9,820.374984	0.004727068	0.00002235	0.00001671	0.00408747	0.00000805	0.0000000001
391	**26-Jul-05**	9,831.601105	0.001142493	0.00000131	0.00001209	0.00347660	-0.00001540	0.0000000002
392	**27-Jul-05**	9,834.480932	0.000292872	0.00000009	0.00000849	0.00291315	-0.00001200	0.0000000001
393	**28-Jul-05**	9,831.832627	-0.000269324	0.00000007	0.00000596	0.00244178	-0.00000841	0.0000000001
394	**29-Jul-05**	9,819.618170	-0.001243110	0.00000155	0.00000464	0.00215342	-0.00000442	0.0000000000
395	**02-Aug-05**	9,782.637161	-0.003773143	0.00001424	0.00000752	0.00274172	0.00000960	0.0000000001
396	**03-Aug-05**	9,756.353157	-0.002690417	0.00000724	0.00000743	0.00272643	-0.00000028	0.0000000000
397	**04-Aug-05**	9,768.074631	0.001200698	0.00000144	0.00000564	0.00237400	-0.00000599	0.0000000000
398	**05-Aug-05**	9,737.560088	-0.003128795	0.00000979	0.00000688	0.00262334	0.00000415	0.0000000000
399	**08-Aug-05**	9,771.092217	0.003437671	0.00001182	0.00000836	0.00289182	0.00000494	0.0000000000
400	**09-Aug-05**	9,790.931661	0.002028364	0.00000411	0.00000709	0.00266235	-0.00000425	0.0000000000
401	**10-Aug-05**	9,786.257540	-0.000477507	0.00000023	0.00000503	0.00224279	-0.00000686	0.0000000000
402	**11-Aug-05**	9,766.112266	-0.002060649	0.00000425	0.00000479	0.00218974	-0.00000078	0.0000000000
403	**12-Aug-05**	9,830.486542	0.006569967	0.00004316	0.00001631	0.00403804	0.00003837	0.0000000015
404	**15-Aug-05**	9,861.327112	0.003132327	0.00000981	0.00001436	0.00378913	-0.00000649	0.0000000000
405	**16-Aug-05**	9,881.386861	0.002032117	0.00000413	0.00001129	0.00335993	-0.00001023	0.0000000001
406	**17-Aug-05**	9,900.627615	0.001945278	0.00000378	0.00000904	0.00300626	-0.00000750	0.0000000001
407	**18-Aug-05**	9,964.483031	0.006428923	0.00004133	0.00001873	0.00432731	0.00003229	0.0000000010
408	**19-Aug-05**	9,980.053191	0.001561346	0.00000244	0.00001384	0.00372012	-0.00001629	0.0000000003
409	**22-Aug-05**	10,009.293680	0.002925609	0.00000856	0.00001226	0.00350075	-0.00000528	0.0000000000
410	**23-Aug-05**	10,084.689692	0.007504372	0.00005632	0.00002547	0.00504711	0.00004406	0.0000000019
411	**24-Aug-05**	10,199.415049	0.011311969	0.00012796	0.00005622	0.00749797	0.00010249	0.0000000105
412	**25-Aug-05**	10,340.369393	0.013725223	0.00018838	0.00009587	0.00979123	0.00013216	0.0000000175
413	**26-Aug-05**	10,410.073840	0.006718383	0.00004514	0.00008065	0.00898046	-0.00005073	0.0000000026
414	**29-Aug-05**	10,479.968267	0.006691675	0.00004478	0.00006989	0.00835988	-0.00003587	0.0000000013
415	**30-Aug-05**	10,949.772909	0.043853066	0.00192309	0.00062585	0.02501697	0.00185320	0.0000034344
416	**31-Aug-05**	10,475.170660	-0.044310959	0.00196346	0.00102713	0.03204891	0.00133761	0.0000017892
417	**01-Sep-05**	10,475.370763	0.000019102	0.00000000	0.00071899	0.02681404	-0.00102713	0.0000010550
418	**02-Sep-05**	10,349.751113	-0.012064388	0.00014555	0.00054696	0.02338717	-0.00057344	0.0000003288
419	**05-Sep-05**	10,351.014041	0.000122017	0.00000001	0.00038288	0.01956723	-0.00054694	0.0000002991
420	**06-Sep-05**	10,365.106272	0.001360509	0.00000185	0.00026857	0.01638807	-0.00038103	0.0000001452
421	**07-Sep-05**	10,375.195414	0.000972902	0.00000095	0.00018828	0.01372159	-0.00026762	0.0000000716
422	**08-Sep-05**	10,370.322245	-0.000469805	0.00000022	0.00013186	0.01148319	-0.00018806	0.0000000354
423	**09-Sep-05**	10,285.195748	-0.008242541	0.00006794	0.00011269	0.01061539	-0.00006392	0.0000000041
424	**12-Sep-05**	10,064.683053	-0.021672987	0.00046972	0.00021980	0.01482552	0.00035703	0.0000001275
425	**13-Sep-05**	10,070.066174	0.000534709	0.00000029	0.00015394	0.01240738	-0.00021951	0.0000000482
426	**14-Sep-05**	10,015.586440	-0.005424755	0.00002943	0.00011659	0.01079761	-0.00012452	0.0000000155

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
427	**15-Sep-05**	10,070.211936	0.005439229	0.00002959	0.00009049	0.00951249	-0.00008700	0.0000000076
428	**16-Sep-05**	10,119.589237	0.004891321	0.00002393	0.00007052	0.00839754	-0.00006656	0.0000000044
429	**19-Sep-05**	10,165.159261	0.004493041	0.00002019	0.00005542	0.00744442	-0.00005033	0.0000000025
430	**20-Sep-05**	10,175.644028	0.001030910	0.00000106	0.00003911	0.00625399	-0.00005436	0.0000000030
431	**21-Sep-05**	10,235.278825	0.005843437	0.00003415	0.00003762	0.00613371	-0.00000497	0.0000000000
432	**22-Sep-05**	10,230.169051	-0.000499356	0.00000025	0.00002641	0.00513911	-0.00003737	0.0000000014
433	**23-Sep-05**	10,199.973688	-0.002955964	0.00000874	0.00002111	0.00459442	-0.00001767	0.0000000003
434	**26-Sep-05**	10,225.534160	0.002502800	0.00000626	0.00001666	0.00408109	-0.00001484	0.0000000002
435	**27-Sep-05**	10,256.002122	0.002975166	0.00000885	0.00001431	0.00378341	-0.00000780	0.0000000001
436	**28-Sep-05**	10,319.471947	0.006169484	0.00003806	0.00002144	0.00463019	0.00002375	0.0000000006
437	**29-Sep-05**	10,410.580340	0.008790039	0.00007726	0.00003819	0.00617952	0.00005583	0.0000000031
438	**30-Sep-05**	10,215.364412	-0.018929727	0.00035833	0.00013423	0.01158581	0.00032015	0.0000001025
439	**04-Oct-05**	10,264.501768	0.004798610	0.00002303	0.00010087	0.01004339	-0.00011120	0.0000000124
440	**05-Oct-05**	10,107.880542	-0.015376141	0.00023643	0.00014154	0.01189691	0.00013556	0.0000000184
441	**06-Oct-05**	10,050.131926	-0.005729610	0.00003283	0.00010892	0.01043667	-0.00010871	0.0000000118
442	**07-Oct-05**	10,057.849067	0.000767570	0.00000059	0.00007642	0.00874206	-0.00010833	0.0000000117
443	**10-Oct-05**	10,047.480876	-0.001031387	0.00000106	0.00005382	0.00733591	-0.00007536	0.0000000057
444	**11-Oct-05**	10,145.214521	0.009680175	0.00009371	0.00006578	0.00811065	0.00003989	0.0000000016
445	**12-Oct-05**	10,102.461743	-0.004222987	0.00001783	0.00005140	0.00716924	-0.00004795	0.0000000023
446	**13-Oct-05**	10,138.353066	0.003546434	0.00001258	0.00003975	0.00630490	-0.00003882	0.0000000015
447	**14-Oct-05**	10,121.042831	-0.001708860	0.00000292	0.00002870	0.00535745	-0.00003683	0.0000000014
448	**17-Oct-05**	10,090.257499	-0.003046351	0.00000928	0.00002288	0.00478285	-0.00001942	0.0000000004
449	**18-Oct-05**	10,109.698997	0.001924905	0.00000371	0.00001712	0.00413818	-0.00001917	0.0000000004
450	**19-Oct-05**	10,109.684323	-0.000001451	0.00000000	0.00001199	0.00346225	-0.00001712	0.0000000003
451	**20-Oct-05**	10,094.767752	-0.001476563	0.00000218	0.00000905	0.00300751	-0.00000981	0.0000000001
452	**21-Oct-05**	10,074.567244	-0.002003092	0.00000401	0.00000754	0.00274505	-0.00000503	0.0000000000
453	**24-Oct-05**	10,069.500134	-0.000503087	0.00000025	0.00000535	0.00231314	-0.00000728	0.0000000001
454	**25-Oct-05**	10,025.319829	-0.004397190	0.00001934	0.00000955	0.00308966	0.00001398	0.0000000002
455	**26-Oct-05**	9,965.622108	-0.005972495	0.00003567	0.00001738	0.00416934	0.00002612	0.0000000007
456	**27-Oct-05**	9,985.465116	0.001989166	0.00000396	0.00001336	0.00365451	-0.00001343	0.0000000002
457	**28-Oct-05**	10,005.288907	0.001983297	0.00000393	0.00001053	0.00324482	-0.00000942	0.0000000001
458	**31-Oct-05**	10,049.418993	0.004400977	0.00001937	0.00001318	0.00363053	0.00000884	0.0000000001
459	**01-Nov-05**	10,184.937014	0.013395044	0.00017943	0.00006305	0.00794070	0.00016625	0.0000000276
460	**02-Nov-05**	10,079.354405	-0.010420652	0.00010859	0.00007672	0.00875873	0.00004554	0.0000000021
461	**03-Nov-05**	10,051.247471	-0.002792460	0.00000780	0.00005604	0.00748599	-0.00006892	0.0000000047
462	**04-Nov-05**	10,055.548029	0.000427772	0.00000018	0.00003928	0.00626761	-0.00005586	0.0000000031
463	**07-Nov-05**	10,070.951017	0.001530618	0.00000234	0.00002820	0.00531045	-0.00003694	0.0000000014
464	**08-Nov-05**	10,093.163447	0.002203165	0.00000485	0.00002120	0.00460400	-0.00002335	0.0000000005
465	**09-Nov-05**	10,038.126362	-0.005467829	0.00002990	0.00002381	0.00487923	0.00000870	0.0000000001
466	**10-Nov-05**	9,990.447598	-0.004761083	0.00002267	0.00002347	0.00484409	-0.00000114	0.0000000000
467	**11-Nov-05**	9,964.505119	-0.002600106	0.00000676	0.00001845	0.00429579	-0.00001670	0.0000000003
468	**14-Nov-05**	10,005.451820	0.004100836	0.00001682	0.00001796	0.00423825	-0.00000164	0.0000000000
469	**15-Nov-05**	10,023.335621	0.001785810	0.00000319	0.00001353	0.00367840	-0.00001477	0.0000000002
470	**16-Nov-05**	10,001.368551	-0.002193998	0.00000481	0.00001092	0.00330387	-0.00000872	0.0000000001
471	**17-Nov-05**	10,023.236741	0.002184133	0.00000477	0.00000907	0.00301198	-0.00000615	0.0000000000
472	**18-Nov-05**	10,070.989761	0.004752918	0.00002259	0.00001313	0.00362319	0.00001352	0.0000000002
473	**21-Nov-05**	10,105.004773	0.003371833	0.00001137	0.00001260	0.00354965	-0.00000176	0.0000000000
474	**22-Nov-05**	10,055.835490	-0.004877711	0.00002379	0.00001596	0.00399470	0.00001119	0.0000000001
475	**23-Nov-05**	10,073.250136	0.001730297	0.00000299	0.00001207	0.00347398	-0.00001296	0.0000000002
476	**24-Nov-05**	10,051.476565	-0.002163863	0.00000468	0.00000985	0.00313889	-0.00000739	0.0000000001
477	**25-Nov-05**	10,065.217391	0.001366112	0.00000187	0.00000746	0.00273070	-0.00000799	0.0000000001
478	**28-Nov-05**	10,064.085083	-0.000112503	0.00000001	0.00000522	0.00228550	-0.00000744	0.0000000001
479	**29-Nov-05**	10,044.600622	-0.001937916	0.00000376	0.00000478	0.00218703	-0.00000147	0.0000000000
480	**30-Nov-05**	10,024.360536	-0.002017054	0.00000407	0.00000457	0.00213746	-0.00000071	0.0000000000
481	**01-Dec-05**	10,025.727827	0.000136388	0.00000002	0.00000320	0.00178989	-0.00000455	0.0000000000
482	**02-Dec-05**	10,029.621651	0.000388308	0.00000015	0.00000229	0.00151255	-0.00000305	0.0000000000
483	**05-Dec-05**	9,994.636632	-0.003494267	0.00001221	0.00000526	0.00229444	0.00000992	0.0000000001
484	**06-Dec-05**	9,928.115016	-0.006677979	0.00004460	0.00001706	0.00413083	0.00003933	0.0000000015
485	**07-Dec-05**	9,865.189536	-0.006358281	0.00004043	0.00002407	0.00490642	0.00002336	0.0000000005
486	**08-Dec-05**	9,817.596567	-0.004836009	0.00002339	0.00002387	0.00488540	-0.00000069	0.0000000000
487	**09-Dec-05**	9,740.622506	-0.007871316	0.00006196	0.00003529	0.00594090	0.00003809	0.0000000015
488	**12-Dec-05**	9,729.981378	-0.001093046	0.00000119	0.00002506	0.00500644	-0.00003410	0.0000000012

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
489	**13-Dec-05**	9,755.323370	0.002601140	0.00000677	0.00001957	0.00442435	-0.00001830	0.0000000003
490	**14-Dec-05**	9,830.261239	0.007652387	0.00005856	0.00003127	0.00559197	0.00003898	0.0000000015
491	**15-Dec-05**	9,823.771035	-0.000660445	0.00000044	0.00002202	0.00469254	-0.00003083	0.0000000010
492	**16-Dec-05**	9,855.111350	0.003185175	0.00001015	0.00001846	0.00429623	-0.00001187	0.0000000001
493	**19-Dec-05**	9,915.549598	0.006113952	0.00003738	0.00002413	0.00491268	0.00001892	0.0000000004
494	**20-Dec-05**	9,837.618403	-0.007890542	0.00006226	0.00003557	0.00596425	0.00003813	0.0000000015
495	**21-Dec-05**	9,850.258644	0.001284064	0.00000165	0.00002540	0.00503937	-0.00003392	0.0000000012
496	**22-Dec-05**	9,806.434024	-0.004459010	0.00001988	0.00002374	0.00487253	-0.00000551	0.0000000000
497	**23-Dec-05**	9,860.388722	0.005486889	0.00003011	0.00002565	0.00506467	0.00000636	0.0000000000
498	**28-Dec-05**	9,840.484048	-0.002020690	0.00000408	0.00001918	0.00437956	-0.00002157	0.0000000005
499	**29-Dec-05**	9,839.506173	-0.000099378	0.00000001	0.00001343	0.00366461	-0.00001917	0.0000000004
500	**30-Dec-05**	9,825.541775	-0.001420225	0.00000202	0.00001001	0.00316317	-0.00001141	0.0000000001
501	**03-Jan-06**	9,760.065067	-0.006686232	0.00004471	0.00002042	0.00451837	0.00003470	0.0000000012
502	**04-Jan-06**	9,667.429649	-0.009536600	0.00009095	0.00004157	0.00644787	0.00007053	0.0000000050
503	**05-Jan-06**	9,625.418060	-0.004355153	0.00001897	0.00003479	0.00589853	-0.00002261	0.0000000005
504	**06-Jan-06**	9,590.471092	-0.003637303	0.00001323	0.00002832	0.00532202	-0.00002156	0.0000000005
505	**09-Jan-06**	9,445.108191	-0.015273055	0.00023327	0.00008981	0.00947663	0.00020494	0.0000000420
506	**10-Jan-06**	9,455.491792	0.001098759	0.00000121	0.00006323	0.00795153	-0.00008860	0.0000000078
507	**11-Jan-06**	9,485.607676	0.003179954	0.00001011	0.00004729	0.00687695	-0.00005311	0.0000000028
508	**12-Jan-06**	9,364.490931	-0.012850693	0.00016514	0.00008265	0.00909103	0.00011785	0.0000000139
509	**13-Jan-06**	9,384.656367	0.002151078	0.00000463	0.00005924	0.00769681	-0.00007802	0.0000000061
510	**16-Jan-06**	9,375.578780	-0.000967748	0.00000094	0.00004175	0.00646139	-0.00005830	0.0000000034
511	**17-Jan-06**	9,494.627935	0.012617852	0.00015921	0.00007699	0.00877427	0.00011746	0.0000000138
512	**18-Jan-06**	9,470.446643	-0.002550088	0.00000650	0.00005584	0.00747277	-0.00007048	0.0000000050
513	**19-Jan-06**	9,504.353650	0.003573902	0.00001277	0.00004292	0.00655145	-0.00004307	0.0000000019
514	**20-Jan-06**	9,429.754274	-0.007879934	0.00006209	0.00004867	0.00697661	0.00001917	0.0000000004
515	**23-Jan-06**	9,409.736039	-0.002125136	0.00000452	0.00003543	0.00595197	-0.00004416	0.0000000019
516	**24-Jan-06**	9,444.518449	0.003689613	0.00001361	0.00002888	0.00537421	-0.00002181	0.0000000005
517	**25-Jan-06**	9,419.827013	-0.002617790	0.00000685	0.00002227	0.00471947	-0.00002203	0.0000000005
518	**27-Jan-06**	9,369.764659	-0.005328745	0.00002840	0.00002411	0.00491019	0.00000612	0.0000000000
519	**30-Jan-06**	9,384.594847	0.001581519	0.00000250	0.00001763	0.00419850	-0.00002161	0.0000000005
520	**31-Jan-06**	9,387.483356	0.000307745	0.00000009	0.00001237	0.00351676	-0.00001753	0.0000000003
521	**01-Feb-06**	9,315.032335	-0.007747769	0.00006003	0.00002667	0.00516388	0.00004766	0.0000000023
522	**02-Feb-06**	9,343.085106	0.003007034	0.00000904	0.00002138	0.00462370	-0.00001762	0.0000000003
523	**03-Feb-06**	9,302.510961	-0.004352149	0.00001894	0.00002065	0.00454394	-0.00000244	0.0000000000
524	**06-Feb-06**	9,252.411576	-0.005400131	0.00002916	0.00002320	0.00481681	0.00000851	0.0000000001
525	**07-Feb-06**	9,213.468013	-0.004217900	0.00001779	0.00002158	0.00464525	-0.00000541	0.0000000000
526	**08-Feb-06**	9,262.972497	0.005358673	0.00002872	0.00002372	0.00487026	0.00000714	0.0000000001
527	**09-Feb-06**	9,248.547101	-0.001558532	0.00000243	0.00001733	0.00416321	-0.00002129	0.0000000005
528	**10-Feb-06**	9,195.402299	-0.005762860	0.00003321	0.00002210	0.00470062	0.00001588	0.0000000003
529	**13-Feb-06**	9,234.631565	0.004257108	0.00001812	0.00002090	0.00457208	-0.00000397	0.0000000000
530	**14-Feb-06**	9,235.046792	0.000044963	0.00000000	0.00001463	0.00382536	-0.00002090	0.0000000004
531	**15-Feb-06**	9,219.657081	-0.001667837	0.00000278	0.00001108	0.00332834	-0.00001185	0.0000000001
532	**16-Feb-06**	9,223.169576	0.000380906	0.00000015	0.00000780	0.00279250	-0.00001093	0.0000000001
533	**17-Feb-06**	9,233.996481	0.001173193	0.00000138	0.00000587	0.00242313	-0.00000642	0.0000000000
534	**20-Feb-06**	9,233.881845	-0.000012415	0.00000000	0.00000411	0.00202734	-0.00000587	0.0000000000
535	**21-Feb-06**	9,254.944459	0.002278416	0.00000519	0.00000443	0.00210581	0.00000108	0.0000000000
536	**22-Feb-06**	9,293.353188	0.004141489	0.00001715	0.00000825	0.00287223	0.00001272	0.0000000002
537	**23-Feb-06**	9,320.559859	0.002923264	0.00000855	0.00000834	0.00288763	0.00000030	0.0000000000
538	**24-Feb-06**	9,293.434207	-0.002914546	0.00000849	0.00000839	0.00289573	0.00000016	0.0000000000
539	**27-Feb-06**	9,263.471432	-0.003229288	0.00001043	0.00000900	0.00299970	0.00000204	0.0000000000
540	**28-Feb-06**	9,227.851531	-0.003852612	0.00001484	0.00001075	0.00327895	0.00000584	0.0000000000
541	**01-Mar-06**	9,169.582773	-0.006334465	0.00004013	0.00001956	0.00442309	0.00002937	0.0000000009
542	**02-Mar-06**	9,181.647438	0.001314862	0.00000173	0.00001421	0.00377005	-0.00001783	0.0000000003
543	**03-Mar-06**	9,192.963610	0.001231718	0.00000152	0.00001040	0.00322559	-0.00001270	0.0000000002
544	**06-Mar-06**	9,196.884233	0.000426390	0.00000018	0.00000734	0.00270881	-0.00001022	0.0000000001
545	**07-Mar-06**	9,197.831978	0.000103045	0.00000001	0.00000514	0.00226705	-0.00000733	0.0000000001
546	**08-Mar-06**	9,304.004358	0.011477082	0.00013172	0.00004311	0.00656618	0.00012658	0.0000000160
547	**09-Mar-06**	9,373.556190	0.007447670	0.00005547	0.00004682	0.00684256	0.00001235	0.0000000002
548	**10-Mar-06**	9,298.842750	-0.008002597	0.00006404	0.00005199	0.00721019	0.00001722	0.0000000003
549	**13-Mar-06**	9,237.692622	-0.006597819	0.00004353	0.00004945	0.00703208	-0.00000846	0.0000000001
550	**14-Mar-06**	9,190.184049	-0.005156175	0.00002659	0.00004259	0.00652618	-0.00002286	0.0000000005

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
551	**15-Mar-06**	9,132.728995	-0.006271409	0.00003933	0.00004161	0.00645080	-0.00000326	0.0000000000
552	**16-Mar-06**	9,143.283177	0.001154977	0.00000133	0.00002953	0.00543408	-0.00004028	0.0000000016
553	**17-Mar-06**	9,162.929746	0.002146438	0.00000461	0.00002205	0.00469602	-0.00002492	0.0000000006
554	**20-Mar-06**	9,128.516271	-0.003762799	0.00001416	0.00001968	0.00443671	-0.00000789	0.0000000001
555	**21-Mar-06**	9,128.141052	-0.000041105	0.00000000	0.00001378	0.00371209	-0.00001968	0.0000000004
556	**22-Mar-06**	9,116.376307	-0.001289675	0.00000166	0.00001014	0.00318507	-0.00001212	0.0000000001
557	**23-Mar-06**	9,080.523823	-0.003940510	0.00001553	0.00001176	0.00342922	0.00000538	0.0000000000
558	**24-Mar-06**	9,105.611025	0.002758939	0.00000761	0.00001052	0.00324272	-0.00000415	0.0000000000
559	**27-Mar-06**	9,073.315440	-0.003553083	0.00001262	0.00001115	0.00333886	0.00000211	0.0000000000
560	**28-Mar-06**	9,021.540194	-0.005722664	0.00003275	0.00001763	0.00419860	0.00002160	0.0000000005
561	**29-Mar-06**	9,099.843327	0.008642124	0.00007469	0.00003475	0.00589455	0.00005706	0.0000000033
562	**30-Mar-06**	9,139.800084	0.004381316	0.00001920	0.00003008	0.00548459	-0.00001555	0.0000000002
563	**31-Mar-06**	9,160.497276	0.002261952	0.00000512	0.00002259	0.00475305	-0.00002496	0.0000000006
564	**03-Apr-06**	9,040.559441	-0.013179407	0.00017370	0.00006792	0.00824154	0.00015111	0.0000000228
565	**04-Apr-06**	8,999.859728	-0.004512066	0.00002036	0.00005365	0.00732487	-0.00004756	0.0000000023
566	**05-Apr-06**	8,999.445676	-0.000046008	0.00000000	0.00003756	0.00612848	-0.00005365	0.0000000029
567	**06-Apr-06**	9,005.486968	0.000671071	0.00000045	0.00002643	0.00514061	-0.00003711	0.0000000014
568	**07-Apr-06**	9,000.547645	-0.000548630	0.00000030	0.00001859	0.00431143	-0.00002612	0.0000000007
569	**10-Apr-06**	8,983.656091	-0.001878488	0.00000353	0.00001407	0.00375107	-0.00001506	0.0000000002
570	**11-Apr-06**	8,989.885183	0.000693140	0.00000048	0.00000999	0.00316125	-0.00001359	0.0000000002
571	**12-Apr-06**	8,992.364331	0.000275733	0.00000008	0.00000702	0.00264920	-0.00000992	0.0000000001
572	**13-Apr-06**	9,004.382361	0.001335578	0.00000178	0.00000545	0.00233408	-0.00000523	0.0000000000
573	**18-Apr-06**	8,973.075362	-0.003482921	0.00001213	0.00000745	0.00272997	0.00000668	0.0000000000
574	**19-Apr-06**	8,969.183152	-0.000433860	0.00000019	0.00000527	0.00229639	-0.00000726	0.0000000001
575	**20-Apr-06**	8,895.153712	-0.008288006	0.00006869	0.00002430	0.00492937	0.00006342	0.0000000040
576	**21-Apr-06**	8,900.027093	0.000547719	0.00000030	0.00001710	0.00413510	-0.00002400	0.0000000006
577	**24-Apr-06**	8,820.450886	-0.008981331	0.00008066	0.00003617	0.00601404	0.00006357	0.0000000040
578	**26-Apr-06**	8,839.453230	0.002152033	0.00000463	0.00002671	0.00516792	-0.00003154	0.0000000010
579	**27-Apr-06**	8,803.668749	-0.004056485	0.00001646	0.00002363	0.00486125	-0.00001025	0.0000000001
580	**28-Apr-06**	8,800.053036	-0.000410790	0.00000017	0.00001659	0.00407343	-0.00002346	0.0000000006
581	**01-May-06**	8,785.132650	-0.001696927	0.00000288	0.00001248	0.00353254	-0.00001371	0.0000000002
582	**02-May-06**	8,763.391086	-0.002477881	0.00000614	0.00001058	0.00325226	-0.00000634	0.0000000000
583	**03-May-06**	8,768.569195	0.000590705	0.00000035	0.00000751	0.00274020	-0.00001023	0.0000000001
584	**04-May-06**	8,797.394137	0.003281911	0.00001077	0.00000849	0.00291331	0.00000326	0.0000000000
585	**05-May-06**	8,786.616326	-0.001225865	0.00000150	0.00000639	0.00252824	-0.00000698	0.0000000000
586	**08-May-06**	8,732.010891	-0.006234006	0.00003886	0.00001613	0.00401662	0.00003247	0.0000000011
587	**09-May-06**	8,747.561451	0.001779284	0.00000317	0.00001224	0.00349900	-0.00001297	0.0000000002
588	**10-May-06**	8,722.797927	-0.002834921	0.00000804	0.00001098	0.00331378	-0.00000421	0.0000000000
589	**11-May-06**	8,742.382990	0.002242756	0.00000503	0.00000920	0.00303246	-0.00000595	0.0000000000
590	**12-May-06**	8,728.279058	-0.001614585	0.00000261	0.00000722	0.00268684	-0.00000659	0.0000000000
591	**15-May-06**	9,004.413292	0.031146602	0.00097011	0.00029609	0.01720717	0.00096289	0.0000009272
592	**16-May-06**	9,314.368117	0.033843344	0.00114537	0.00055087	0.02347067	0.00084929	0.0000007213
593	**17-May-06**	9,035.361414	-0.030412242	0.00092490	0.00066308	0.02575038	0.00037403	0.0000001399
594	**18-May-06**	9,125.000000	0.009871975	0.00009746	0.00049339	0.02221248	-0.00056563	0.0000003199
595	**19-May-06**	9,152.364732	0.002994387	0.00000897	0.00034807	0.01865652	-0.00048443	0.0000002347
596	**22-May-06**	9,315.305715	0.017646537	0.00031140	0.00033707	0.01835936	-0.00003667	0.0000000013
597	**23-May-06**	9,295.569116	-0.002120976	0.00000450	0.00023730	0.01540441	-0.00033257	0.0000001106
598	**24-May-06**	9,354.538195	0.006323746	0.00003999	0.00017810	0.01334556	-0.00019731	0.0000000389
599	**25-May-06**	9,389.627660	0.003744046	0.00001402	0.00012888	0.01135245	-0.00016409	0.0000000269
600	**26-May-06**	9,280.632411	-0.011675947	0.00013633	0.00013111	0.01145046	0.00000745	0.0000000001
601	**29-May-06**	9,250.362940	-0.003266905	0.00001067	0.00009498	0.00974582	-0.00012044	0.0000000145
602	**30-May-06**	9,203.098333	-0.005122585	0.00002624	0.00007436	0.00862316	-0.00006874	0.0000000047
603	**31-May-06**	9,194.604505	-0.000923357	0.00000085	0.00005231	0.00723236	-0.00007351	0.0000000054
604	**01-Jun-06**	9,265.491453	0.007680057	0.00005898	0.00005431	0.00736952	0.00000668	0.0000000000
605	**02-Jun-06**	9,295.284030	0.003210276	0.00001031	0.00004111	0.00641161	-0.00004400	0.0000000019
606	**05-Jun-06**	9,255.517150	-0.004287356	0.00001838	0.00003429	0.00585581	-0.00002273	0.0000000005
607	**06-Jun-06**	9,325.556449	0.007538814	0.00005683	0.00004105	0.00640730	0.00002254	0.0000000005
608	**07-Jun-06**	9,372.554311	0.005027028	0.00002527	0.00003632	0.00602650	-0.00001578	0.0000000002
609	**08-Jun-06**	9,414.843645	0.004501891	0.00002027	0.00003150	0.00561277	-0.00001605	0.0000000003
610	**09-Jun-06**	9,429.530201	0.001558721	0.00000243	0.00002278	0.00477296	-0.00002907	0.0000000008
611	**13-Jun-06**	9,490.222522	0.006415785	0.00004116	0.00002830	0.00531935	0.00001838	0.0000000003
612	**14-Jun-06**	9,505.621021	0.001621250	0.00000263	0.00002060	0.00453821	-0.00002567	0.0000000007

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613	**15-Jun-06**	9,424.275264	-0.008594475	0.00007386	0.00003658	0.00604783	0.00005327	0.0000000028
614	**16-Jun-06**	9,320.048472	-0.011121006	0.00012368	0.00006271	0.00791874	0.00008710	0.0000000076
615	**19-Jun-06**	9,361.096039	0.004394552	0.00001931	0.00004969	0.00704898	-0.00004339	0.0000000019
616	**20-Jun-06**	9,384.885764	0.002538116	0.00000644	0.00003671	0.00605923	-0.00004325	0.0000000019
617	**21-Jun-06**	9,353.617309	-0.003337351	0.00001114	0.00002904	0.00538901	-0.00002558	0.0000000007
618	**22-Jun-06**	9,343.509388	-0.001081227	0.00000117	0.00002068	0.00454749	-0.00002787	0.0000000008
619	**23-Jun-06**	9,395.260147	0.005523403	0.00003051	0.00002363	0.00486088	0.00000983	0.0000000001
620	**26-Jun-06**	9,404.208800	0.000952011	0.00000091	0.00001681	0.00410020	-0.00002272	0.0000000005
621	**27-Jun-06**	9,389.479422	-0.001567482	0.00000246	0.00001251	0.00353627	-0.00001435	0.0000000002
622	**28-Jun-06**	9,352.370542	-0.003960007	0.00001568	0.00001346	0.00366854	0.00000318	0.0000000000
623	**29-Jun-06**	9,338.275673	-0.001508227	0.00000227	0.00001010	0.00317854	-0.00001118	0.0000000001
624	**30-Jun-06**	9,280.236782	-0.006234556	0.00003887	0.00001873	0.00432818	0.00002877	0.0000000008
625	**03-Jul-06**	9,140.509228	-0.015170964	0.00023016	0.00008216	0.00906425	0.00021143	0.0000000447
626	**04-Jul-06**	9,075.517334	-0.007135713	0.00005092	0.00007279	0.00853159	-0.00003124	0.0000000010
627	**05-Jul-06**	9,083.724046	0.000903861	0.00000082	0.00005120	0.00715518	-0.00007197	0.0000000052
628	**06-Jul-06**	9,164.533082	0.008856688	0.00007844	0.00005937	0.00770519	0.00002724	0.0000000007
629	**07-Jul-06**	9,084.941050	-0.008722721	0.00007609	0.00006438	0.00802401	0.00001672	0.0000000003
630	**10-Jul-06**	9,038.435962	-0.005132067	0.00002634	0.00005297	0.00727810	-0.00003805	0.0000000014
631	**11-Jul-06**	9,050.353947	0.001317721	0.00000174	0.00003760	0.00613192	-0.00005123	0.0000000026
632	**12-Jul-06**	9,040.296925	-0.001111848	0.00000124	0.00002669	0.00516635	-0.00003636	0.0000000013
633	**13-Jul-06**	9,089.465326	0.005424067	0.00002942	0.00002751	0.00524499	0.00000273	0.0000000000
634	**14-Jul-06**	9,215.294431	0.013748456	0.00018902	0.00007596	0.00871567	0.00016151	0.0000000261
635	**17-Jul-06**	9,275.536023	0.006515857	0.00004246	0.00006591	0.00811856	-0.00003351	0.0000000011
636	**18-Jul-06**	9,260.347130	-0.001638864	0.00000269	0.00004694	0.00685153	-0.00006323	0.0000000040
637	**19-Jul-06**	9,244.396725	-0.001723926	0.00000297	0.00003375	0.00580965	-0.00004397	0.0000000019
638	**20-Jul-06**	9,157.333333	-0.009462593	0.00008954	0.00005049	0.00710553	0.00005579	0.0000000031
639	**21-Jul-06**	9,152.542373	-0.000523320	0.00000027	0.00003542	0.00595182	-0.00005021	0.0000000025
640	**24-Jul-06**	9,177.425795	0.002715055	0.00000737	0.00002701	0.00519696	-0.00002805	0.0000000008
641	**25-Jul-06**	9,124.454437	-0.005788641	0.00003351	0.00002896	0.00538130	0.00000650	0.0000000000
642	**26-Jul-06**	9,130.837412	0.000699301	0.00000049	0.00002042	0.00451858	-0.00002847	0.0000000008
643	**27-Jul-06**	9,083.388050	-0.005210155	0.00002715	0.00002244	0.00473667	0.00000673	0.0000000000
644	**28-Jul-06**	9,084.590164	0.000132333	0.00000002	0.00001571	0.00396364	-0.00002242	0.0000000005
645	**31-Jul-06**	9,070.253330	-0.001579395	0.00000249	0.00001175	0.00342720	-0.00001322	0.0000000002
646	**01-Aug-06**	9,090.432503	0.002222293	0.00000494	0.00000970	0.00311505	-0.00000681	0.0000000000
647	**02-Aug-06**	9,100.625652	0.001120677	0.00000126	0.00000717	0.00267755	-0.00000845	0.0000000001
648	**03-Aug-06**	9,120.418848	0.002172565	0.00000472	0.00000643	0.00253663	-0.00000245	0.0000000000
649	**04-Aug-06**	9,103.439223	-0.001863451	0.00000347	0.00000555	0.00235497	-0.00000296	0.0000000000
650	**08-Aug-06**	9,077.427822	-0.002861406	0.00000819	0.00000634	0.00251762	0.00000264	0.0000000000
651	**09-Aug-06**	9,106.624439	0.003211236	0.00001031	0.00000753	0.00274418	0.00000397	0.0000000000
652	**10-Aug-06**	9,074.146215	-0.003572814	0.00001277	0.00000910	0.00301676	0.00000523	0.0000000000
653	**11-Aug-06**	9,069.616135	-0.000499354	0.00000025	0.00000645	0.00253878	-0.00000885	0.0000000001
654	**14-Aug-06**	9,094.462541	0.002735776	0.00000748	0.00000676	0.00259945	0.00000104	0.0000000000
655	**15-Aug-06**	9,092.824226	-0.000180160	0.00000003	0.00000474	0.00217709	-0.00000672	0.0000000000
656	**16-Aug-06**	9,098.285565	0.000600440	0.00000036	0.00000343	0.00185094	-0.00000438	0.0000000000
657	**17-Aug-06**	9,093.041439	-0.000576552	0.00000033	0.00000250	0.00158047	-0.00000309	0.0000000000
658	**18-Aug-06**	9,074.779866	-0.002010321	0.00000404	0.00000296	0.00172074	0.00000154	0.0000000000
659	**21-Aug-06**	9,065.420561	-0.001031886	0.00000106	0.00000239	0.00154664	-0.00000190	0.0000000000
660	**22-Aug-06**	9,075.872933	0.001152329	0.00000133	0.00000207	0.00143973	-0.00000106	0.0000000000
661	**23-Aug-06**	9,073.394495	-0.000273117	0.00000007	0.00000147	0.00121382	-0.00000200	0.0000000000
662	**24-Aug-06**	9,125.525210	0.005729006	0.00003282	0.00001088	0.00329815	0.00003135	0.0000000010
663	**25-Aug-06**	9,139.926355	0.001576873	0.00000249	0.00000836	0.00289144	-0.00000839	0.0000000001
664	**28-Aug-06**	9,137.885579	-0.000223306	0.00000005	0.00000587	0.00242224	-0.00000831	0.0000000001
665	**29-Aug-06**	9,094.844549	-0.004721302	0.00002229	0.00001079	0.00328547	0.00001642	0.0000000003
666	**30-Aug-06**	9,084.349993	-0.001154568	0.00000133	0.00000796	0.00282062	-0.00000946	0.0000000001
667	**31-Aug-06**	9,097.941524	0.001495030	0.00000224	0.00000624	0.00249793	-0.00000572	0.0000000000
668	**01-Sep-06**	9,078.431373	-0.002146760	0.00000461	0.00000575	0.00239799	-0.00000163	0.0000000000
669	**04-Sep-06**	9,079.698858	0.000139605	0.00000002	0.00000403	0.00200776	-0.00000573	0.0000000000
670	**05-Sep-06**	9,079.340345	-0.000039486	0.00000000	0.00000282	0.00167995	-0.00000403	0.0000000000
671	**06-Sep-06**	9,077.303488	-0.000224365	0.00000005	0.00000199	0.00141091	-0.00000277	0.0000000000
672	**07-Sep-06**	9,090.553236	0.001458593	0.00000213	0.00000203	0.00142538	0.00000014	0.0000000000
673	**08-Sep-06**	9,101.242400	0.001175163	0.00000138	0.00000184	0.00135518	-0.00000065	0.0000000000
674	**11-Sep-06**	9,126.562085	0.002778140	0.00000772	0.00000360	0.00189762	0.00000588	0.0000000000

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675	**12-Sep-06**	9,140.313580	0.001505621	0.00000227	0.00000320	0.00178906	-0.00000133	0.0000000000
676	**13-Sep-06**	9,150.126549	0.001073016	0.00000115	0.00000259	0.00160808	-0.00000205	0.0000000000
677	**14-Sep-06**	9,115.103127	-0.003834988	0.00001471	0.00000622	0.00249445	0.00001212	0.0000000001
678	**15-Sep-06**	9,137.566138	0.002461341	0.00000606	0.00000617	0.00248457	-0.00000016	0.0000000000
679	**18-Sep-06**	9,138.641499	0.000117679	0.00000001	0.00000433	0.00207974	-0.00000616	0.0000000000
680	**19-Sep-06**	9,147.584381	0.000978100	0.00000096	0.00000331	0.00182064	-0.00000337	0.0000000000
681	**20-Sep-06**	9,165.448505	0.001950974	0.00000381	0.00000346	0.00186070	0.00000049	0.0000000000
682	**21-Sep-06**	9,138.363949	-0.002959446	0.00000876	0.00000505	0.00224745	0.00000530	0.0000000000
683	**22-Sep-06**	9,177.357492	0.004257938	0.00001813	0.00000897	0.00299579	0.00001308	0.0000000002
684	**25-Sep-06**	9,194.363201	0.001851292	0.00000343	0.00000731	0.00270379	-0.00000555	0.0000000000
685	**26-Sep-06**	9,234.437086	0.004349057	0.00001891	0.00001079	0.00328506	0.00001160	0.0000000001
686	**27-Sep-06**	9,199.413880	-0.003799884	0.00001444	0.00001189	0.00344759	0.00000365	0.0000000000
687	**28-Sep-06**	9,213.543055	0.001534699	0.00000236	0.00000903	0.00300445	-0.00000953	0.0000000001
688	**29-Sep-06**	9,229.946524	0.001778782	0.00000316	0.00000727	0.00269591	-0.00000586	0.0000000000
689	**03-Oct-06**	9,196.201685	-0.003662716	0.00001342	0.00000911	0.00301864	0.00000615	0.0000000000
690	**04-Oct-06**	9,217.426382	0.002305326	0.00000531	0.00000797	0.00282363	-0.00000380	0.0000000000
691	**05-Oct-06**	9,218.708121	0.000139046	0.00000002	0.00000559	0.00236365	-0.00000795	0.0000000001
692	**06-Oct-06**	9,206.391836	-0.001336903	0.00000179	0.00000445	0.00210878	-0.00000380	0.0000000000
693	**09-Oct-06**	9,224.764468	0.001993650	0.00000397	0.00000431	0.00207491	-0.00000047	0.0000000000
694	**10-Oct-06**	9,224.265199	-0.000054124	0.00000000	0.00000301	0.00173625	-0.00000430	0.0000000000
695	**11-Oct-06**	9,220.010758	-0.000461329	0.00000021	0.00000217	0.00147446	-0.00000280	0.0000000000
696	**12-Oct-06**	9,219.544846	-0.000050534	0.00000000	0.00000152	0.00123394	-0.00000217	0.0000000000
697	**13-Oct-06**	9,203.728362	-0.001717012	0.00000295	0.00000195	0.00139652	0.00000143	0.0000000000
698	**16-Oct-06**	9,202.772964	-0.000103811	0.00000001	0.00000137	0.00116979	-0.00000194	0.0000000000
699	**17-Oct-06**	9,154.630979	-0.005244979	0.00002751	0.00000921	0.00303493	0.00002614	0.0000000007
700	**18-Oct-06**	9,156.945917	0.000252839	0.00000006	0.00000647	0.00254298	-0.00000915	0.0000000001
701	**19-Oct-06**	9,159.274460	0.000254260	0.00000006	0.00000455	0.00213216	-0.00000640	0.0000000000
702	**20-Oct-06**	9,169.408977	0.001105864	0.00000122	0.00000355	0.00188392	-0.00000332	0.0000000000
703	**23-Oct-06**	9,160.636758	-0.000957141	0.00000092	0.00000276	0.00166110	-0.00000263	0.0000000000
704	**24-Oct-06**	9,165.456226	0.000525968	0.00000028	0.00000201	0.00141932	-0.00000248	0.0000000000
705	**25-Oct-06**	9,130.320547	-0.003840856	0.00001475	0.00000584	0.00241574	0.00001274	0.0000000002
706	**26-Oct-06**	9,108.430576	-0.002400382	0.00000576	0.00000581	0.00241114	-0.00000007	0.0000000000
707	**27-Oct-06**	9,093.525180	-0.001637780	0.00000268	0.00000487	0.00220776	-0.00000313	0.0000000000
708	**30-Oct-06**	9,101.065212	0.000828821	0.00000069	0.00000362	0.00190211	-0.00000419	0.0000000000
709	**31-Oct-06**	9,114.664587	0.001493147	0.00000223	0.00000320	0.00178927	-0.00000139	0.0000000000
710	**01-Nov-06**	9,098.074687	-0.001821791	0.00000332	0.00000324	0.00179908	0.00000012	0.0000000000
711	**02-Nov-06**	9,108.923715	0.001191743	0.00000142	0.00000269	0.00164066	-0.00000182	0.0000000000
712	**03-Nov-06**	9,114.038486	0.000561355	0.00000032	0.00000198	0.00140669	-0.00000238	0.0000000000
713	**06-Nov-06**	9,129.757111	0.001723175	0.00000297	0.00000228	0.00150862	0.00000099	0.0000000000
714	**07-Nov-06**	9,126.163392	-0.000393705	0.00000016	0.00000164	0.00128049	-0.00000212	0.0000000000
715	**08-Nov-06**	9,110.938310	-0.001669683	0.00000279	0.00000198	0.00140859	0.00000115	0.0000000000
716	**09-Nov-06**	9,122.212078	0.001236623	0.00000153	0.00000185	0.00135928	-0.00000045	0.0000000000
717	**10-Nov-06**	9,115.539924	-0.000731686	0.00000054	0.00000145	0.00120580	-0.00000131	0.0000000000
718	**13-Nov-06**	9,125.505018	0.001092601	0.00000119	0.00000138	0.00117299	-0.00000026	0.0000000000
719	**14-Nov-06**	9,127.648444	0.000234855	0.00000006	0.00000098	0.00098979	-0.00000132	0.0000000000
720	**15-Nov-06**	9,139.012281	0.001244216	0.00000155	0.00000115	0.00107247	0.00000057	0.0000000000
721	**16-Nov-06**	9,172.647788	0.003673675	0.00001350	0.00000485	0.00220316	0.00001235	0.0000000002
722	**17-Nov-06**	9,172.755741	0.000011769	0.00000000	0.00000340	0.00184331	-0.00000485	0.0000000000
723	**20-Nov-06**	9,150.513855	-0.002427721	0.00000589	0.00000415	0.00203632	0.00000250	0.0000000000
724	**21-Nov-06**	9,144.899285	-0.000613768	0.00000038	0.00000302	0.00173656	-0.00000377	0.0000000000
725	**22-Nov-06**	9,140.007771	-0.000535033	0.00000029	0.00000220	0.00148217	-0.00000273	0.0000000000
726	**23-Nov-06**	9,127.629372	-0.001355227	0.00000184	0.00000209	0.00144526	-0.00000036	0.0000000000
727	**24-Nov-06**	9,148.496968	0.002283592	0.00000521	0.00000303	0.00173970	0.00000313	0.0000000000
728	**27-Nov-06**	9,142.930459	-0.000608647	0.00000037	0.00000223	0.00149323	-0.00000266	0.0000000000
729	**28-Nov-06**	9,170.305677	0.002989667	0.00000894	0.00000424	0.00205967	0.00000671	0.0000000000
730	**29-Nov-06**	9,157.827476	-0.001361645	0.00000185	0.00000353	0.00187771	-0.00000239	0.0000000000
731	**30-Nov-06**	9,165.605096	0.000848926	0.00000072	0.00000268	0.00163837	-0.00000281	0.0000000000
732	**01-Dec-06**	9,142.603850	-0.002512672	0.00000631	0.00000377	0.00194243	0.00000363	0.0000000000
733	**04-Dec-06**	9,169.844902	0.002975142	0.00000885	0.00000530	0.00230143	0.00000508	0.0000000000
734	**05-Dec-06**	9,143.292296	-0.002899844	0.00000841	0.00000623	0.00249606	0.00000311	0.0000000000
735	**06-Dec-06**	9,098.412698	-0.004920558	0.00002421	0.00001162	0.00340952	0.00001798	0.0000000003
736	**07-Dec-06**	9,101.508047	0.000340150	0.00000012	0.00000817	0.00285868	-0.00001151	0.0000000001

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
737	**08-Dec-06**	9,067.528190	-0.003740418	0.00001399	0.00000992	0.00314923	0.00000582	0.0000000000
738	**11-Dec-06**	9,105.088213	0.004133700	0.00001709	0.00001207	0.00347399	0.00000717	0.0000000001
739	**12-Dec-06**	9,070.418948	-0.003814948	0.00001455	0.00001281	0.00357969	0.00000249	0.0000000000
740	**13-Dec-06**	9,072.217286	0.000198244	0.00000004	0.00000898	0.00299695	-0.00001277	0.0000000002
741	**14-Dec-06**	9,075.416508	0.000352577	0.00000012	0.00000632	0.00251485	-0.00000886	0.0000000001
742	**15-Dec-06**	9,077.887198	0.000272203	0.00000007	0.00000445	0.00210935	-0.00000625	0.0000000000
743	**18-Dec-06**	9,077.415227	-0.000051993	0.00000000	0.00000312	0.00176504	-0.00000445	0.0000000000
744	**19-Dec-06**	9,127.482383	0.005500419	0.00003025	0.00001126	0.00335517	0.00002714	0.0000000007
745	**20-Dec-06**	9,097.859327	-0.003250757	0.00001057	0.00001105	0.00332419	-0.00000069	0.0000000000
746	**21-Dec-06**	9,105.597964	0.000850238	0.00000072	0.00000795	0.00281993	-0.00001033	0.0000000001
747	**22-Dec-06**	9,075.298906	-0.003333068	0.00001111	0.00000890	0.00298316	0.00000316	0.0000000000
748	**27-Dec-06**	9,045.194144	-0.003322734	0.00001104	0.00000954	0.00308895	0.00000214	0.0000000000
749	**28-Dec-06**	9,030.125842	-0.001667279	0.00000278	0.00000751	0.00274100	-0.00000676	0.0000000000
750	**29-Dec-06**	9,005.434096	-0.002738120	0.00000750	0.00000751	0.00274014	-0.00000002	0.0000000000
751	**02-Jan-07**	8,954.528278	-0.005668826	0.00003214	0.00001490	0.00385960	0.00002463	0.0000000006
752	**03-Jan-07**	8,967.895661	0.001491694	0.00000223	0.00001110	0.00333093	-0.00001267	0.0000000002
753	**04-Jan-07**	8,979.643444	0.001309125	0.00000171	0.00000828	0.00287762	-0.00000938	0.0000000001
754	**05-Jan-07**	9,007.926362	0.003144721	0.00000989	0.00000876	0.00296028	0.00000161	0.0000000000
755	**08-Jan-07**	9,048.595974	0.004504708	0.00002029	0.00001222	0.00349600	0.00001153	0.0000000001
756	**09-Jan-07**	9,016.602810	-0.003541970	0.00001255	0.00001232	0.00350985	0.00000032	0.0000000000
757	**10-Jan-07**	9,066.427289	0.005510648	0.00003037	0.00001773	0.00421112	0.00001805	0.0000000003
758	**11-Jan-07**	9,064.536741	-0.000208544	0.00000004	0.00001243	0.00352513	-0.00001769	0.0000000003
759	**12-Jan-07**	9,161.538462	0.010644380	0.00011330	0.00004269	0.00653371	0.00010088	0.0000000102
760	**15-Jan-07**	9,117.871690	-0.004777709	0.00002283	0.00003673	0.00606057	-0.00001986	0.0000000004
761	**16-Jan-07**	9,103.448276	-0.001583136	0.00000251	0.00002646	0.00514425	-0.00003422	0.0000000012
762	**17-Jan-07**	9,082.440020	-0.002310392	0.00000534	0.00002013	0.00448616	-0.00002113	0.0000000004
763	**18-Jan-07**	9,091.601116	0.001008152	0.00000102	0.00001439	0.00379379	-0.00001911	0.0000000004
764	**19-Jan-07**	9,080.445231	-0.001227807	0.00000151	0.00001053	0.00324457	-0.00001289	0.0000000002
765	**22-Jan-07**	9,088.492214	0.000885796	0.00000078	0.00000760	0.00275762	-0.00000974	0.0000000001
766	**23-Jan-07**	9,098.745088	0.001127480	0.00000127	0.00000570	0.00238841	-0.00000633	0.0000000000
767	**24-Jan-07**	9,078.846645	-0.002189339	0.00000479	0.00000543	0.00233047	-0.00000091	0.0000000000
768	**25-Jan-07**	9,094.407388	0.001712489	0.00000293	0.00000468	0.00216369	-0.00000250	0.0000000000
769	**29-Jan-07**	9,123.917819	0.003239645	0.00001050	0.00000643	0.00253489	0.00000581	0.0000000000
770	**30-Jan-07**	9,111.484739	-0.001363620	0.00000186	0.00000506	0.00224851	-0.00000457	0.0000000000
771	**31-Jan-07**	9,093.264249	-0.002001730	0.00000401	0.00000474	0.00217742	-0.00000105	0.0000000000
772	**01-Feb-07**	9,095.600568	0.000256896	0.00000007	0.00000334	0.00182718	-0.00000468	0.0000000000
773	**02-Feb-07**	9,072.445019	-0.002549043	0.00000650	0.00000429	0.00207034	0.00000316	0.0000000000
774	**05-Feb-07**	9,085.736454	0.001463961	0.00000214	0.00000364	0.00190876	-0.00000214	0.0000000000
775	**06-Feb-07**	9,055.361982	-0.003348695	0.00001121	0.00000591	0.00243197	0.00000757	0.0000000001
776	**07-Feb-07**	9,046.332046	-0.000997690	0.00000100	0.00000444	0.00210684	-0.00000492	0.0000000000
777	**08-Feb-07**	9,053.103007	0.000748196	0.00000056	0.00000328	0.00180971	-0.00000388	0.0000000000
778	**09-Feb-07**	9,049.449142	-0.000403685	0.00000016	0.00000234	0.00153018	-0.00000311	0.0000000000
779	**12-Feb-07**	9,054.141362	0.000518375	0.00000027	0.00000172	0.00131134	-0.00000207	0.0000000000
780	**13-Feb-07**	9,069.857697	0.001734313	0.00000301	0.00000211	0.00145124	0.00000129	0.0000000000
781	**14-Feb-07**	9,067.948718	-0.000210497	0.00000004	0.00000149	0.00121965	-0.00000206	0.0000000000
782	**15-Feb-07**	9,048.348004	-0.002163877	0.00000468	0.00000245	0.00156397	0.00000319	0.0000000000
783	**16-Feb-07**	9,049.197043	0.000093829	0.00000001	0.00000171	0.00130952	-0.00000244	0.0000000000
784	**19-Feb-07**	9,057.777778	0.000947782	0.00000090	0.00000147	0.00121238	-0.00000082	0.0000000000
785	**20-Feb-07**	9,068.259819	0.001156573	0.00000134	0.00000143	0.00119591	-0.00000013	0.0000000000
786	**21-Feb-07**	9,067.699733	-0.000061765	0.00000000	0.00000100	0.00100115	-0.00000143	0.0000000000
787	**22-Feb-07**	9,074.589128	0.000759485	0.00000058	0.00000087	0.00093523	-0.00000043	0.0000000000
788	**23-Feb-07**	9,085.489599	0.001200487	0.00000144	0.00000104	0.00102206	0.00000057	0.0000000000
789	**26-Feb-07**	9,068.064150	-0.001919784	0.00000369	0.00000184	0.00135532	0.00000264	0.0000000000
790	**27-Feb-07**	9,070.528967	0.000271776	0.00000007	0.00000131	0.00114367	-0.00000176	0.0000000000
791	**28-Feb-07**	9,176.395939	0.011603945	0.00013465	0.00004131	0.00642737	0.00013334	0.0000000178
792	**01-Mar-07**	9,155.216285	-0.002310726	0.00000534	0.00003052	0.00552445	-0.00003597	0.0000000013
793	**02-Mar-07**	9,177.070064	0.002384186	0.00000568	0.00002307	0.00480302	-0.00002484	0.0000000006
794	**05-Mar-07**	9,214.727085	0.004094986	0.00001677	0.00002118	0.00460206	-0.00000630	0.0000000000
795	**06-Mar-07**	9,207.805635	-0.000751411	0.00000056	0.00001499	0.00387230	-0.00002061	0.0000000004
796	**07-Mar-07**	9,205.408886	-0.000260329	0.00000007	0.00001052	0.00324293	-0.00001493	0.0000000002
797	**08-Mar-07**	9,212.659205	0.000787305	0.00000062	0.00000755	0.00274728	-0.00000990	0.0000000001
798	**09-Mar-07**	9,178.539340	-0.003710460	0.00001377	0.00000941	0.00306815	0.00000622	0.0000000000

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
799	**12-Mar-07**	9,169.439468	-0.000991921	0.00000098	0.00000688	0.00262386	-0.00000843	0.0000000001
800	**13-Mar-07**	9,190.633749	0.002308737	0.00000533	0.00000642	0.00253344	-0.00000155	0.0000000000
801	**14-Mar-07**	9,219.948849	0.003184595	0.00001014	0.00000754	0.00274506	0.00000372	0.0000000000
802	**15-Mar-07**	9,211.396591	-0.000928012	0.00000086	0.00000553	0.00235225	-0.00000667	0.0000000000
803	**16-Mar-07**	9,218.434343	0.000763735	0.00000058	0.00000405	0.00201200	-0.00000495	0.0000000000
804	**19-Mar-07**	9,224.484666	0.000656113	0.00000043	0.00000296	0.00172129	-0.00000362	0.0000000000
805	**20-Mar-07**	9,185.871743	-0.004194702	0.00001760	0.00000735	0.00271158	0.00001463	0.0000000002
806	**21-Mar-07**	9,138.618798	-0.005157366	0.00002660	0.00001313	0.00362304	0.00001925	0.0000000004
807	**22-Mar-07**	9,096.886242	-0.004577074	0.00002095	0.00001547	0.00393362	0.00000782	0.0000000001
808	**23-Mar-07**	9,131.082423	0.003752061	0.00001408	0.00001505	0.00388004	-0.00000140	0.0000000000
809	**26-Mar-07**	9,112.602535	-0.002025895	0.00000410	0.00001177	0.00343068	-0.00001095	0.0000000001
810	**27-Mar-07**	9,108.776267	-0.000419976	0.00000018	0.00000829	0.00287952	-0.00001159	0.0000000001
811	**28-Mar-07**	9,132.811529	0.002635218	0.00000694	0.00000789	0.00280846	-0.00000135	0.0000000000
812	**29-Mar-07**	9,130.111524	-0.000295682	0.00000009	0.00000555	0.00235530	-0.00000780	0.0000000001
813	**30-Mar-07**	9,130.111524	0.000000000	0.00000000	0.00000388	0.00197059	-0.00000555	0.0000000000
814	**02-Apr-07**	9,107.998526	-0.002424923	0.00000588	0.00000448	0.00211715	0.00000200	0.0000000000
815	**03-Apr-07**	9,122.053045	0.001541907	0.00000238	0.00000385	0.00196236	-0.00000210	0.0000000000
816	**04-Apr-07**	9,105.911330	-0.001771094	0.00000314	0.00000364	0.00190700	-0.00000071	0.0000000000
817	**05-Apr-07**	9,108.607812	0.000296080	0.00000009	0.00000257	0.00160373	-0.00000355	0.0000000000
818	**10-Apr-07**	9,102.392809	-0.000682555	0.00000047	0.00000194	0.00139288	-0.00000211	0.0000000000
819	**11-Apr-07**	9,104.912068	0.000276731	0.00000008	0.00000138	0.00117519	-0.00000186	0.0000000000
820	**12-Apr-07**	9,105.020616	0.000011922	0.00000000	0.00000097	0.00098325	-0.00000138	0.0000000000
821	**13-Apr-07**	9,107.400288	0.000261324	0.00000007	0.00000070	0.00083501	-0.00000090	0.0000000000
822	**16-Apr-07**	9,098.015634	-0.001030974	0.00000106	0.00000081	0.00089830	0.00000037	0.0000000000
823	**17-Apr-07**	9,089.270696	-0.000961654	0.00000092	0.00000084	0.00091776	0.00000012	0.0000000000
824	**18-Apr-07**	9,072.103312	-0.001890539	0.00000357	0.00000166	0.00128913	0.00000273	0.0000000000
825	**19-Apr-07**	9,103.580870	0.003463703	0.00001200	0.00000476	0.00218231	0.00001034	0.0000000001
826	**20-Apr-07**	9,094.941261	-0.000949485	0.00000090	0.00000360	0.00189847	-0.00000386	0.0000000000
827	**23-Apr-07**	9,090.364334	-0.000503365	0.00000025	0.00000260	0.00161212	-0.00000335	0.0000000000
828	**24-Apr-07**	9,094.545455	0.000459845	0.00000021	0.00000188	0.00137211	-0.00000239	0.0000000000
829	**26-Apr-07**	9,074.651944	-0.002189807	0.00000480	0.00000276	0.00166026	0.00000291	0.0000000000
830	**27-Apr-07**	9,080.000000	0.000589166	0.00000035	0.00000203	0.00142606	-0.00000241	0.0000000000
831	**30-Apr-07**	9,083.212385	0.000353724	0.00000013	0.00000146	0.00120876	-0.00000191	0.0000000000
832	**01-May-07**	9,083.453932	0.000026592	0.00000000	0.00000102	0.00101142	-0.00000146	0.0000000000
833	**02-May-07**	9,079.665333	-0.000417175	0.00000017	0.00000077	0.00087653	-0.00000085	0.0000000000
834	**03-May-07**	9,047.907823	-0.003503783	0.00001228	0.00000422	0.00205445	0.00001151	0.0000000001
835	**04-May-07**	9,018.315018	-0.003276040	0.00001073	0.00000617	0.00248481	0.00000651	0.0000000000
836	**07-May-07**	8,884.442828	-0.014955761	0.00022367	0.00007142	0.00845130	0.00021750	0.0000000473
837	**08-May-07**	8,904.538341	0.002259322	0.00000510	0.00005153	0.00717833	-0.00006632	0.0000000044
838	**09-May-07**	8,853.249729	-0.005776480	0.00003337	0.00004608	0.00678824	-0.00001816	0.0000000003
839	**10-May-07**	8,768.472906	-0.009621928	0.00009258	0.00006003	0.00774794	0.00004650	0.0000000022
840	**11-May-07**	8,839.898807	0.008112765	0.00006582	0.00006177	0.00785917	0.00000579	0.0000000000
841	**14-May-07**	8,804.895608	-0.003967544	0.00001574	0.00004796	0.00692524	-0.00004603	0.0000000021
842	**15-May-07**	8,823.105560	0.002066026	0.00000427	0.00003485	0.00590354	-0.00004369	0.0000000019
843	**16-May-07**	8,805.091870	-0.002043737	0.00000418	0.00002565	0.00506452	-0.00003067	0.0000000009
844	**17-May-07**	8,804.795350	-0.000033677	0.00000000	0.00001795	0.00423732	-0.00002565	0.0000000007
845	**18-May-07**	8,807.406505	0.000296517	0.00000009	0.00001259	0.00354891	-0.00001787	0.0000000003
846	**21-May-07**	8,765.492102	-0.004770355	0.00002276	0.00001564	0.00395515	0.00001016	0.0000000001
847	**22-May-07**	8,707.557503	-0.006631334	0.00004397	0.00002414	0.00491352	0.00002833	0.0000000008
848	**23-May-07**	8,689.462156	-0.002080282	0.00000433	0.00001820	0.00426593	-0.00001982	0.0000000004
849	**24-May-07**	8,710.500729	0.002418233	0.00000585	0.00001449	0.00380697	-0.00001235	0.0000000002
850	**25-May-07**	8,754.726186	0.005064412	0.00002565	0.00001784	0.00422370	0.00001116	0.0000000001
851	**28-May-07**	8,714.599609	-0.004593955	0.00002110	0.00001882	0.00433809	0.00000326	0.0000000000
852	**29-May-07**	8,770.491803	0.006393148	0.00004087	0.00002544	0.00504332	0.00002205	0.0000000005
853	**30-May-07**	8,815.339521	0.005100449	0.00002601	0.00002561	0.00506052	0.00000058	0.0000000000
854	**31-May-07**	8,829.451722	0.001599589	0.00000256	0.00001869	0.00432364	-0.00002305	0.0000000005
855	**01-Jun-07**	8,827.004219	-0.000277236	0.00000008	0.00001311	0.00362060	-0.00001862	0.0000000003
856	**04-Jun-07**	8,774.750990	-0.005937292	0.00003525	0.00001975	0.00444427	0.00002214	0.0000000005
857	**05-Jun-07**	8,805.362701	0.003482542	0.00001213	0.00001746	0.00417906	-0.00000762	0.0000000001
858	**06-Jun-07**	8,858.463727	0.006012422	0.00003615	0.00002307	0.00480312	0.00001868	0.0000000003
859	**07-Jun-07**	8,889.676352	0.003517288	0.00001237	0.00001986	0.00445649	-0.00001070	0.0000000001
860	**08-Jun-07**	9,064.577398	0.019483581	0.00037961	0.00012779	0.01130421	0.00035975	0.0000001294

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
861	**12-Jun-07**	9,030.231180	-0.003796256	0.00001441	0.00009377	0.00968365	-0.00011337	0.0000000129
862	**13-Jun-07**	9,064.431764	0.003780189	0.00001429	0.00006993	0.00836230	-0.00007948	0.0000000063
863	**14-Jun-07**	9,049.606487	-0.001636883	0.00000268	0.00004975	0.00705362	-0.00006725	0.0000000045
864	**15-Jun-07**	9,079.827916	0.003333966	0.00001112	0.00003816	0.00617754	-0.00003864	0.0000000015
865	**18-Jun-07**	8,972.472710	-0.011893938	0.00014147	0.00006915	0.00831584	0.00010330	0.0000000107
866	**19-Jun-07**	8,915.491288	-0.006370945	0.00004059	0.00006058	0.00778357	-0.00002856	0.0000000008
867	**20-Jun-07**	8,905.290505	-0.001144819	0.00000131	0.00004280	0.00654232	-0.00005927	0.0000000035
868	**21-Jun-07**	8,978.481911	0.008185277	0.00006700	0.00005006	0.00707538	0.00002420	0.0000000006
869	**22-Jun-07**	8,993.153919	0.001632796	0.00000267	0.00003584	0.00598686	-0.00004739	0.0000000022
870	**25-Jun-07**	9,010.367578	0.001912255	0.00000366	0.00002619	0.00511730	-0.00003219	0.0000000010
871	**26-Jun-07**	9,051.215483	0.004523189	0.00002046	0.00002447	0.00494656	-0.00000573	0.0000000000
872	**27-Jun-07**	9,109.605326	0.006430331	0.00004135	0.00002953	0.00543440	0.00001688	0.0000000003
873	**28-Jun-07**	9,069.960803	-0.004361445	0.00001902	0.00002638	0.00513610	-0.00001051	0.0000000001
874	**29-Jun-07**	9,034.994698	-0.003862605	0.00001492	0.00002294	0.00478974	-0.00001146	0.0000000001
875	**02-Jul-07**	9,000.234412	-0.003854714	0.00001486	0.00002052	0.00452954	-0.00000808	0.0000000001
876	**03-Jul-07**	8,998.482549	-0.000194665	0.00000004	0.00001437	0.00379119	-0.00002048	0.0000000004
877	**04-Jul-07**	9,019.584985	0.002342365	0.00000549	0.00001171	0.00342157	-0.00000889	0.0000000001
878	**05-Jul-07**	9,017.597017	-0.000220430	0.00000005	0.00000821	0.00286524	-0.00001166	0.0000000001
879	**06-Jul-07**	9,029.432376	0.001311613	0.00000172	0.00000626	0.00250256	-0.00000649	0.0000000000
880	**09-Jul-07**	9,025.724596	-0.000410717	0.00000017	0.00000443	0.00210584	-0.00000609	0.0000000000
881	**10-Jul-07**	9,005.363806	-0.002258410	0.00000510	0.00000463	0.00215275	0.00000067	0.0000000000
882	**11-Jul-07**	9,025.212037	0.002201620	0.00000485	0.00000470	0.00216753	0.00000021	0.0000000000
883	**12-Jul-07**	9,029.746688	0.000502316	0.00000025	0.00000336	0.00183423	-0.00000445	0.0000000000
884	**13-Jul-07**	9,010.494753	-0.002134333	0.00000456	0.00000372	0.00192917	0.00000119	0.0000000000
885	**16-Jul-07**	9,025.200458	0.001630734	0.00000266	0.00000340	0.00184472	-0.00000106	0.0000000000
886	**17-Jul-07**	9,054.703593	0.003263641	0.00001065	0.00000558	0.00236167	0.00000725	0.0000000001
887	**18-Jul-07**	9,062.321978	0.000841019	0.00000071	0.00000412	0.00202890	-0.00000487	0.0000000000
888	**19-Jul-07**	9,105.515041	0.004754902	0.00002261	0.00000966	0.00310874	0.00001849	0.0000000003
889	**20-Jul-07**	9,067.575241	-0.004175388	0.00001743	0.00001200	0.00346340	0.00000777	0.0000000001
890	**23-Jul-07**	9,084.626713	0.001878723	0.00000353	0.00000946	0.00307497	-0.00000847	0.0000000001
891	**24-Jul-07**	9,049.180328	-0.003909431	0.00001528	0.00001120	0.00334723	0.00000583	0.0000000000
892	**25-Jul-07**	9,072.967182	0.002625171	0.00000689	0.00000991	0.00314805	-0.00000431	0.0000000000
893	**26-Jul-07**	9,097.999322	0.002755182	0.00000759	0.00000921	0.00303553	-0.00000232	0.0000000000
894	**27-Jul-07**	9,215.573676	0.012840309	0.00016487	0.00005591	0.00747744	0.00015566	0.0000000242
895	**30-Jul-07**	9,227.599199	0.001304062	0.00000170	0.00003965	0.00629672	-0.00005421	0.0000000029
896	**31-Jul-07**	9,185.720952	-0.004548698	0.00002069	0.00003396	0.00582763	-0.00001896	0.0000000004
897	**01-Aug-07**	9,299.739768	0.012336210	0.00015218	0.00006943	0.00833232	0.00011822	0.0000000140
898	**02-Aug-07**	9,321.240492	0.002309302	0.00000533	0.00005020	0.00708513	-0.00006409	0.0000000041
899	**03-Aug-07**	9,274.889252	-0.004985052	0.00002485	0.00004259	0.00652645	-0.00002535	0.0000000006
900	**07-Aug-07**	9,304.682041	0.003207051	0.00001029	0.00003290	0.00573601	-0.00003231	0.0000000010
901	**08-Aug-07**	9,320.490368	0.001697523	0.00000288	0.00002390	0.00488833	-0.00003002	0.0000000009
902	**09-Aug-07**	9,284.064665	-0.003915788	0.00001533	0.00002133	0.00461812	-0.00000856	0.0000000001
903	**10-Aug-07**	9,350.772889	0.007159548	0.00005126	0.00003031	0.00550515	0.00002993	0.0000000009
904	**13-Aug-07**	9,345.904537	-0.000520772	0.00000027	0.00002130	0.00461476	-0.00003004	0.0000000009
905	**14-Aug-07**	9,366.877310	0.002241546	0.00000502	0.00001641	0.00405149	-0.00001627	0.0000000003
906	**15-Aug-07**	9,397.852057	0.003301383	0.00001090	0.00001476	0.00384187	-0.00000552	0.0000000000
907	**16-Aug-07**	9,484.919945	0.009222005	0.00008505	0.00003585	0.00598712	0.00007029	0.0000000049
908	**17-Aug-07**	9,475.032010	-0.001043034	0.00000109	0.00002542	0.00504165	-0.00003476	0.0000000012
909	**20-Aug-07**	9,405.704234	-0.007343791	0.00005393	0.00003397	0.00582857	0.00002851	0.0000000008
910	**21-Aug-07**	9,435.534005	0.003166437	0.00001003	0.00002679	0.00517575	-0.00002395	0.0000000006
911	**22-Aug-07**	9,429.534390	-0.000636055	0.00000040	0.00001887	0.00434434	-0.00002638	0.0000000007
912	**23-Aug-07**	9,377.914110	-0.005489358	0.00003013	0.00002225	0.00471712	0.00001126	0.0000000001
913	**24-Aug-07**	9,410.546827	0.003473701	0.00001207	0.00001920	0.00438130	-0.00001018	0.0000000001
914	**27-Aug-07**	9,382.582583	-0.002976009	0.00000886	0.00001609	0.00401174	-0.00001034	0.0000000001
915	**28-Aug-07**	9,399.902818	0.001844297	0.00000340	0.00001229	0.00350518	-0.00001269	0.0000000002
916	**29-Aug-07**	9,423.053114	0.002459795	0.00000605	0.00001042	0.00322732	-0.00000624	0.0000000000
917	**30-Aug-07**	9,412.414132	-0.001129676	0.00000128	0.00000767	0.00277015	-0.00000914	0.0000000001
918	**31-Aug-07**	9,409.544680	-0.000304905	0.00000009	0.00000540	0.00232369	-0.00000758	0.0000000001
919	**03-Sep-07**	9,387.234043	-0.002373880	0.00000564	0.00000547	0.00233886	0.00000024	0.0000000000
920	**04-Sep-07**	9,383.164006	-0.000433665	0.00000019	0.00000389	0.00197119	-0.00000528	0.0000000000
921	**05-Sep-07**	9,405.123224	0.002337544	0.00000546	0.00000436	0.00208786	0.00000158	0.0000000000
922	**06-Sep-07**	9,415.765820	0.001130935	0.00000128	0.00000344	0.00185340	-0.00000308	0.0000000000

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
923	**10-Sep-07**	9,418.363614	0.000275860	0.00000008	0.00000243	0.00155801	-0.00000336	0.0000000000
924	**11-Sep-07**	9,429.262394	0.001156515	0.00000134	0.00000210	0.00144929	-0.00000109	0.0000000000
925	**12-Sep-07**	9,419.717636	-0.001012761	0.00000103	0.00000178	0.00133342	-0.00000107	0.0000000000
926	**13-Sep-07**	9,414.918970	-0.000509558	0.00000026	0.00000132	0.00115000	-0.00000152	0.0000000000
927	**14-Sep-07**	9,379.614194	-0.003756924	0.00001411	0.00000516	0.00227158	0.00001279	0.0000000002
928	**17-Sep-07**	9,371.963503	-0.000816005	0.00000067	0.00000381	0.00195239	-0.00000449	0.0000000000
929	**18-Sep-07**	9,391.859345	0.002120661	0.00000450	0.00000402	0.00200436	0.00000069	0.0000000000
930	**19-Sep-07**	9,258.564054	-0.014294320	0.00020433	0.00006411	0.00800690	0.00020031	0.0000000401
931	**20-Sep-07**	9,184.504421	-0.008031205	0.00006450	0.00006423	0.00801420	0.00000039	0.0000000000
932	**21-Sep-07**	9,187.758859	0.000354277	0.00000013	0.00004500	0.00670797	-0.00006410	0.0000000041
933	**24-Sep-07**	9,130.535055	-0.006247742	0.00003903	0.00004321	0.00657328	-0.00000596	0.0000000000
934	**25-Sep-07**	9,156.751762	0.002867208	0.00000822	0.00003271	0.00571943	-0.00003499	0.0000000012
935	**26-Sep-07**	9,137.654604	-0.002087760	0.00000436	0.00002421	0.00491996	-0.00002835	0.0000000008
936	**27-Sep-07**	9,140.384834	0.000298744	0.00000009	0.00001697	0.00411958	-0.00002412	0.0000000006
937	**28-Sep-07**	9,143.536875	0.000344788	0.00000012	0.00001192	0.00345186	-0.00001685	0.0000000003
938	**02-Oct-07**	9,073.363431	-0.007704252	0.00005936	0.00002615	0.00511345	0.00004744	0.0000000023
939	**03-Oct-07**	9,104.729730	0.003451003	0.00001191	0.00002188	0.00467718	-0.00001424	0.0000000002
940	**04-Oct-07**	9,139.711724	0.003834816	0.00001471	0.00001972	0.00444128	-0.00000717	0.0000000001
941	**05-Oct-07**	9,102.795311	-0.004047302	0.00001638	0.00001872	0.00432685	-0.00000334	0.0000000000
942	**08-Oct-07**	9,040.974529	-0.006814573	0.00004644	0.00002704	0.00519968	0.00002772	0.0000000008
943	**09-Oct-07**	9,098.241290	0.006314160	0.00003987	0.00003089	0.00555754	0.00001283	0.0000000002
944	**10-Oct-07**	9,057.527540	-0.004484946	0.00002011	0.00002765	0.00525878	-0.00001077	0.0000000001
945	**11-Oct-07**	9,085.148955	0.003044913	0.00000927	0.00002214	0.00470530	-0.00001838	0.0000000003
946	**12-Oct-07**	9,022.707035	-0.006896694	0.00004756	0.00002977	0.00545593	0.00002542	0.0000000006
947	**15-Oct-07**	9,060.395274	0.004168344	0.00001738	0.00002605	0.00510388	-0.00001239	0.0000000002
948	**16-Oct-07**	9,059.791065	-0.000066689	0.00000000	0.00001824	0.00427037	-0.00002605	0.0000000007
949	**17-Oct-07**	9,138.009050	0.008596475	0.00007390	0.00003494	0.00591059	0.00005566	0.0000000031
950	**18-Oct-07**	9,094.470562	-0.004775935	0.00002281	0.00003130	0.00559441	-0.00001213	0.0000000001
951	**19-Oct-07**	9,093.554163	-0.000100769	0.00000001	0.00002191	0.00468094	-0.00003129	0.0000000010
952	**22-Oct-07**	9,119.567665	0.002856569	0.00000816	0.00001779	0.00421733	-0.00001375	0.0000000002
953	**23-Oct-07**	9,128.435222	0.000971893	0.00000094	0.00001273	0.00356840	-0.00001684	0.0000000003
954	**24-Oct-07**	9,155.337642	0.002942767	0.00000866	0.00001151	0.00339284	-0.00000407	0.0000000000
955	**25-Oct-07**	9,179.691830	0.002656576	0.00000706	0.00001018	0.00318986	-0.00000445	0.0000000000
956	**26-Oct-07**	9,134.773550	-0.004905234	0.00002406	0.00001434	0.00378696	0.00001389	0.0000000002
957	**29-Oct-07**	9,093.269855	-0.004553837	0.00002074	0.00001626	0.00403236	0.00000640	0.0000000000
958	**30-Oct-07**	9,112.929624	0.002159679	0.00000466	0.00001278	0.00357508	-0.00001160	0.0000000001
959	**31-Oct-07**	9,098.307292	-0.001605859	0.00000258	0.00000972	0.00311777	-0.00001020	0.0000000001
960	**01-Nov-07**	9,083.288555	-0.001652082	0.00000273	0.00000762	0.00276101	-0.00000699	0.0000000000
961	**02-Nov-07**	9,132.853403	0.005441874	0.00002961	0.00001422	0.00377100	0.00002199	0.0000000005
962	**05-Nov-07**	9,144.936984	0.001322215	0.00000175	0.00001048	0.00323709	-0.00001247	0.0000000002
963	**06-Nov-07**	9,168.473547	0.002570420	0.00000661	0.00000932	0.00305242	-0.00000387	0.0000000000
964	**07-Nov-07**	9,107.295222	-0.006695046	0.00004482	0.00001997	0.00446869	0.00003551	0.0000000013
965	**08-Nov-07**	9,151.882302	0.004883809	0.00002385	0.00002113	0.00459716	0.00000388	0.0000000000
966	**09-Nov-07**	9,125.471190	-0.002890039	0.00000835	0.00001730	0.00415926	-0.00001278	0.0000000002
967	**12-Nov-07**	9,177.498879	0.005685179	0.00003232	0.00002181	0.00466969	0.00001502	0.0000000002
968	**13-Nov-07**	9,187.942864	0.001137352	0.00000129	0.00001565	0.00395629	-0.00002051	0.0000000004
969	**14-Nov-07**	9,172.390871	-0.001694086	0.00000287	0.00001182	0.00343767	-0.00001278	0.0000000002
970	**15-Nov-07**	9,240.084435	0.007353044	0.00005407	0.00002449	0.00494899	0.00004225	0.0000000018
971	**16-Nov-07**	9,348.464318	0.011661062	0.00013598	0.00005794	0.00761176	0.00011149	0.0000000124
972	**19-Nov-07**	9,295.790416	-0.005650431	0.00003193	0.00005014	0.00708064	-0.00002601	0.0000000007
973	**20-Nov-07**	9,373.019466	0.008273638	0.00006845	0.00005563	0.00745860	0.00001832	0.0000000003
974	**21-Nov-07**	9,377.467013	0.000474393	0.00000023	0.00003901	0.00624572	-0.00005541	0.0000000031
975	**22-Nov-07**	9,376.213870	-0.000133642	0.00000002	0.00002731	0.00522606	-0.00003899	0.0000000015
976	**23-Nov-07**	9,378.434066	0.000236762	0.00000006	0.00001913	0.00437436	-0.00002726	0.0000000007
977	**26-Nov-07**	9,370.969567	-0.000796239	0.00000063	0.00001358	0.00368574	-0.00001850	0.0000000003
978	**27-Nov-07**	9,387.662190	0.001779728	0.00000317	0.00001046	0.00323412	-0.00001042	0.0000000001
979	**28-Nov-07**	9,406.257136	0.001978826	0.00000392	0.00000850	0.00291486	-0.00000654	0.0000000000
980	**29-Nov-07**	9,381.653454	-0.002619099	0.00000686	0.00000801	0.00282938	-0.00000164	0.0000000000
981	**30-Nov-07**	9,372.814439	-0.000942604	0.00000089	0.00000587	0.00242287	-0.00000712	0.0000000001
982	**03-Dec-07**	9,348.641582	-0.002582371	0.00000667	0.00000611	0.00247180	0.00000080	0.0000000000
983	**04-Dec-07**	9,307.938687	-0.004363389	0.00001904	0.00000999	0.00316048	0.00001293	0.0000000002
984	**05-Dec-07**	9,269.469331	-0.004141526	0.00001715	0.00001214	0.00348392	0.00000716	0.0000000001

NO	DATE	*USD RATE*	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) + (1-λ) x U(t)^2	*Forecast Volatility EWMA*	*Error*	*Error^2*
985	**06-Dec-07**	9,247.853463	-0.002334666	0.00000545	0.00001013	0.00318302	-0.00000669	0.0000000000
986	**07-Dec-07**	9,255.755642	0.000854123	0.00000073	0.00000731	0.00270388	-0.00000940	0.0000000001
987	**10-Dec-07**	9,249.201278	-0.000708390	0.00000050	0.00000527	0.00229526	-0.00000681	0.0000000000
988	**11-Dec-07**	9,284.267387	0.003784089	0.00001432	0.00000798	0.00282552	0.00000905	0.0000000001
989	**12-Dec-07**	9,317.351598	0.003557136	0.00001265	0.00000938	0.00306341	0.00000467	0.0000000000
990	**13-Dec-07**	9,311.204260	-0.000659991	0.00000044	0.00000670	0.00258840	-0.00000895	0.0000000001
991	**14-Dec-07**	9,329.303068	0.001941880	0.00000377	0.00000582	0.00241270	-0.00000293	0.0000000000
992	**17-Dec-07**	9,373.404502	0.004716057	0.00002224	0.00001075	0.00327828	0.00001642	0.0000000003
993	**18-Dec-07**	9,418.198743	0.004767483	0.00002273	0.00001434	0.00378704	0.00001198	0.0000000001
994	**19-Dec-07**	9,394.993046	-0.002466961	0.00000609	0.00001186	0.00344455	-0.00000826	0.0000000001
995	**20-Dec-07**	9,429.937048	0.003712528	0.00001378	0.00001244	0.00352708	0.00000192	0.0000000000
996	**21-Dec-07**	9,430.460503	0.000055508	0.00000000	0.00000871	0.00295113	-0.00001244	0.0000000002
997	**24-Dec-07**	9,409.666283	-0.002207440	0.00000487	0.00000756	0.00274923	-0.00000384	0.0000000000
998	**27-Dec-07**	9,409.547739	-0.000012598	0.00000000	0.00000529	0.00230018	-0.00000756	0.0000000001
999	**28-Dec-07**	9,430.959469	0.002272947	0.00000517	0.00000525	0.00229204	-0.00000012	0.0000000000
1000	**31-Dec-07**	9,394.283122	-0.003896512	0.00001518	0.00000823	0.00286919	0.00000993	0.0000000001

RMSE **0.0000122022**

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LAMPIRAN XLVI DECAY FACTOR OPTIMUM USD

0.68

	USD INDEX	*Return* U(t)	*Return Squared* U(t)^2	*Forecast Variance* F((t+1)/t) = (λ x F(t)) +	*Forecast Volatility EWMA*
1	8,330.55	-0.0014169502	0.0000020077	0.0000020077	0.0014169502
2	8,320.48	-0.0012092646	0.0000014623	0.0000018332	0.0013539613
3	8,328.61	0.0009764774	0.0000009535	0.0000015517	0.0012456750
4	8,352.29	0.0028386396	0.0000080579	0.0000036337	0.0019062214
5	8,369.23	0.0020260570	0.0000041049	0.0000037845	0.0019453721
6	8,362.80	-0.0007685794	0.0000005907	0.0000027625	0.0016620680
7	8,418.48	0.0066365883	0.0000440443	0.0000159727	0.0039965807
8	8,399.58	-0.0022472915	0.0000050503	0.0000124775	0.0035323517
9	8,400.16	0.0000679643	0.0000000046	0.0000084862	0.0029131056
10	8,399.59	-0.0000674868	0.0000000046	0.0000057721	0.0024025117
11	8,445.74	0.0054799497	0.0000300298	0.0000135346	0.0036789338
12	8,428.57	-0.0020353498	0.0000041426	0.0000105291	0.0032448643
13	8,441.59	0.0015436354	0.0000023828	0.0000079223	0.0028146612
14	8,452.38	0.0012772409	0.0000016313	0.0000059092	0.0024308859
15	8,459.62	0.0008559864	0.0000007327	0.0000042527	0.0020622144
16	8,452.13	-0.0008856228	0.0000007843	0.0000031428	0.0017728057
17	8,437.46	-0.0017373295	0.0000030183	0.0000031030	0.0017615311
18	8,458.61	0.0025033090	0.0000062666	0.0000041153	0.0020286281
19	8,455.59	-0.0003563512	0.0000001270	0.0000028391	0.0016849515
20	8,446.28	-0.0011024420	0.0000012154	0.0000023195	0.0015229849
21	8,418.69	-0.0032716970	0.0000107040	0.0000050025	0.0022366333
22	8,399.18	-0.0023200531	0.0000053826	0.0000051242	0.0022636622
23	8,400.46	0.0001521829	0.0000000232	0.0000034918	0.0018686477
24	8,418.06	0.0020929665	0.0000043805	0.0000037762	0.0019432491
25	8,396.61	-0.0025512515	0.0000065089	0.0000046507	0.0021565413
26	8,397.63	0.0001216370	0.0000000148	0.0000031672	0.0017796602
27	8,400.65	0.0003598498	0.0000001295	0.0000021951	0.0014815961
28	8,422.45	0.0025909775	0.0000067132	0.0000036409	0.0019081140
29	8,424.86	0.0002862082	0.0000000819	0.0000025020	0.0015817788
30	8,439.64	0.0017534564	0.0000030746	0.0000026853	0.0016386737
31	8,454.37	0.0017433434	0.0000030392	0.0000027985	0.0016728807
32	8,437.78	-0.0019640599	0.0000038575	0.0000031374	0.0017712736
33	8,446.51	0.0010345347	0.0000010703	0.0000024759	0.0015735065
34	8,462.64	0.0019069193	0.0000036363	0.0000028473	0.0016873816
35	8,448.03	-0.0017273402	0.0000029837	0.0000028909	0.0017002706

36	8,471.40	0.0027618331	0.0000076277	0.0000044067	0.0020992133
37	8,544.99	0.0086504653	0.0000748306	0.0000269423	0.0051906001
38	8,540.45	-0.0005323396	0.0000002834	0.0000184115	0.0042908586
39	8,589.69	0.0057495689	0.0000330575	0.0000230982	0.0048060599
40	8,592.93	0.0003762706	0.0000001416	0.0000157521	0.0039688902
41	8,536.46	-0.0065930665	0.0000434685	0.0000246213	0.0049619904
42	8,569.73	0.0038899851	0.0000151320	0.0000215848	0.0046459393
43	8,630.30	0.0070435061	0.0000496110	0.0000305531	0.0055274899
44	8,635.37	0.0005863838	0.0000003438	0.0000208862	0.0045701388
45	8,642.68	0.0008469413	0.0000007173	0.0000144321	0.0037989649
46	8,616.80	-0.0029986152	0.0000089917	0.0000126912	0.0035624701
47	8,565.28	-0.0059979832	0.0000359758	0.0000201423	0.0044880138
48	8,538.26	-0.0031596864	0.0000099836	0.0000168915	0.0041099270
49	8,565.32	0.0031650600	0.0000100176	0.0000146919	0.0038329954
50	8,561.84	-0.0004069505	0.0000001656	0.0000100435	0.0031691411
51	8,588.11	0.0030639677	0.0000093879	0.0000098337	0.0031358694
52	8,581.69	-0.0007475932	0.0000005589	0.0000068657	0.0026202570
53	8,624.63	0.0049909533	0.0000249096	0.0000126398	0.0035552475
54	8,639.74	0.0017504689	0.0000030641	0.0000095756	0.0030944432
55	8,605.37	-0.0039862389	0.0000158901	0.0000115962	0.0034053232
56	8,603.23	-0.0002491489	0.0000000621	0.0000079053	0.0028116361
57	8,583.48	-0.0022982073	0.0000052818	0.0000070658	0.0026581506
58	8,573.12	-0.0012076736	0.0000014585	0.0000052714	0.0022959599
59	8,603.56	0.0035443667	0.0000125625	0.0000076046	0.0027576412
60	8,579.73	-0.0027737486	0.0000076937	0.0000076331	0.0027628058
61	8,579.59	-0.0000156995	0.0000000002	0.0000051906	0.0022782853
62	8,584.61	0.0005845333	0.0000003417	0.0000036389	0.0019075991
63	8,588.57	0.0004618416	0.0000002133	0.0000025427	0.0015945942
64	8,575.15	-0.0015637336	0.0000024453	0.0000025115	0.0015847842
65	8,604.12	0.0033721855	0.0000113716	0.0000053468	0.0023123086
66	8,629.02	0.0028900520	0.0000083524	0.0000063086	0.0025116872
67	8,627.05	-0.0002279324	0.0000000520	0.0000043065	0.0020751998
68	8,600.86	-0.0030414192	0.0000092502	0.0000058885	0.0024266155
69	8,610.40	0.0011088451	0.0000012295	0.0000043976	0.0020970471
70	8,637.48	0.0031406226	0.0000098635	0.0000061467	0.0024792531
71	8,648.20	0.0012404603	0.0000015387	0.0000046722	0.0021615158
72	8,630.55	-0.0020437557	0.0000041769	0.0000045137	0.0021245428
73	8,623.79	-0.0007831688	0.0000006134	0.0000032656	0.0018070908
74	8,637.61	0.0016007047	0.0000025623	0.0000030405	0.0017437070
75	8,659.98	0.0025870208	0.0000066927	0.0000042092	0.0020516350
76	8,689.75	0.0034317792	0.0000117771	0.0000066309	0.0025750602
77	8,704.45	0.0016898902	0.0000028557	0.0000054229	0.0023287054

78	8,711.24	0.0007800414	0.0000006085	0.0000038823	0.0019703450
79	8,710.87	-0.0000427309	0.0000000018	0.0000026405	0.0016249679
80	8,696.48	-0.0016525584	0.0000027309	0.0000026695	0.0016338476
81	8,729.81	0.0038241423	0.0000146241	0.0000064949	0.0025485156
82	8,835.08	0.0119867480	0.0001436821	0.0000503948	0.0070989319
83	8,970.27	0.0151861535	0.0002306193	0.0001080666	0.0103955110
84	8,943.31	-0.0030101680	0.0000090611	0.0000763849	0.0087398443
85	9,008.10	0.0072180901	0.0000521008	0.0000686140	0.0082833556
86	9,055.10	0.0052037487	0.0000270790	0.0000553228	0.0074379290
87	8,992.36	-0.0069522999	0.0000483345	0.0000530865	0.0072860502
88	9,078.14	0.0094938778	0.0000901337	0.0000649416	0.0080586368
89	9,057.88	-0.0022343799	0.0000049925	0.0000457579	0.0067644580
90	9,049.68	-0.0009051565	0.0000008193	0.0000313775	0.0056015663
91	9,074.15	0.0027004439	0.0000072924	0.0000236703	0.0048652130
92	9,086.47	0.0013563364	0.0000018396	0.0000166845	0.0040846652
93	9,308.57	0.0241492062	0.0005831842	0.0001979644	0.0140699817
94	9,290.35	-0.0019594198	0.0000038393	0.0001358444	0.0116552291
95	9,310.20	0.0021343041	0.0000045553	0.0000938318	0.0096866842
96	9,289.19	-0.0022589645	0.0000051029	0.0000654386	0.0080894124
97	9,263.61	-0.0027572227	0.0000076023	0.0000469310	0.0068506183
98	9,364.53	0.0108342969	0.0001173820	0.0000694753	0.0083351843
99	9,575.28	0.0222560108	0.0004953300	0.0002057488	0.0143439467
100	9,461.37	-0.0119672521	0.0001432151	0.0001857380	0.0136285739
101	9,467.36	0.0006328550	0.0000004005	0.0001264300	0.0112441105
102	9,338.95	-0.0136565049	0.0001865001	0.0001456525	0.0120686559
103	9,289.77	-0.0052796493	0.0000278747	0.0001079636	0.0103905520
104	9,279.77	-0.0010772784	0.0000011605	0.0000737866	0.0085899126
105	9,380.25	0.0107695048	0.0001159822	0.0000872892	0.0093428690
106	9,380.31	0.0000069409	0.0000000000	0.0000593567	0.0077043282
107	9,398.28	0.0019130782	0.0000036599	0.0000415337	0.0064446641
108	9,393.46	-0.0005127213	0.0000002629	0.0000283270	0.0053223148
109	9,403.42	0.0010600055	0.0000011236	0.0000196219	0.0044296659
110	9,407.54	0.0004376395	0.0000001915	0.0000134042	0.0036611758
111	9,389.80	-0.0018871617	0.0000035614	0.0000102545	0.0032022653
112	9,412.88	0.0024547395	0.0000060257	0.0000089013	0.0029835048
113	9,424.64	0.0012484549	0.0000015586	0.0000065516	0.0025596189
114	9,432.84	0.0008699435	0.0000007568	0.0000046973	0.0021673251
115	9,423.10	-0.0010326471	0.0000010664	0.0000035354	0.0018802654
116	9,411.26	-0.0012579654	0.0000015825	0.0000029105	0.0017060079
117	9,425.30	0.0014913436	0.0000022241	0.0000026908	0.0016403746
118	9,412.11	-0.0014012048	0.0000019634	0.0000024580	0.0015678149
119	9,385.19	-0.0028641327	0.0000082033	0.0000042965	0.0020728028

120	9,258.31	-0.0136108827	0.0001852561	0.0000622036	0.0078869252
121	9,129.52	-0.0140085592	0.0001962397	0.0001050952	0.0102515928
122	8,969.89	-0.0176396307	0.0003111566	0.0001710348	0.0130780277
123	9,024.49	0.0060686671	0.0000368287	0.0001280889	0.0113176349
124	9,006.51	-0.0019943063	0.0000039773	0.0000883731	0.0094006993
125	8,979.96	-0.0029526510	0.0000087181	0.0000628835	0.0079299147
126	8,807.62	-0.0193782364	0.0003755160	0.0001629259	0.0127642449
127	8,910.19	0.0115790433	0.0001340742	0.0001536934	0.0123973143
128	8,969.13	0.0065924978	0.0000434610	0.0001184190	0.0108820514
129	9,000.00	0.0034360078	0.0000118061	0.0000843029	0.0091816620
130	8,909.47	-0.0101100610	0.0001022133	0.0000900343	0.0094886380
131	8,887.38	-0.0024827036	0.0000061638	0.0000631957	0.0079495731
132	8,962.64	0.0084328537	0.0000711130	0.0000657293	0.0081073578
133	8,982.23	0.0021839435	0.0000047696	0.0000462222	0.0067986885
134	9,090.27	0.0119562139	0.0001429510	0.0000771754	0.0087849535
135	9,018.37	-0.0079411607	0.0000630620	0.0000726591	0.0085240324
136	9,088.48	0.0077443605	0.0000599751	0.0000686002	0.0082825265
137	9,124.51	0.0039559731	0.0000156497	0.0000516561	0.0071872163
138	9,120.58	-0.0004304306	0.0000001853	0.0000351854	0.0059317299
139	9,159.99	0.0043113628	0.0000185878	0.0000298742	0.0054657294
140	9,182.65	0.0024710158	0.0000061059	0.0000222683	0.0047189351
141	9,164.41	-0.0019885548	0.0000039544	0.0000164079	0.0040506628
142	9,232.74	0.0074284958	0.0000551826	0.0000288158	0.0053680319
143	9,185.58	-0.0051205258	0.0000262198	0.0000279851	0.0052900900
144	9,202.90	0.0018831344	0.0000035462	0.0000201646	0.0044905031
145	9,164.92	-0.0041352218	0.0000171001	0.0000191840	0.0043799497
146	9,198.60	0.0036681781	0.0000134555	0.0000173509	0.0041654366
147	9,229.80	0.0033857103	0.0000114630	0.0000154668	0.0039327799
148	9,260.61	0.0033325182	0.0000111057	0.0000140712	0.0037511614
149	9,288.54	0.0030120412	0.0000090724	0.0000124716	0.0035315138
150	9,270.06	-0.0019915656	0.0000039663	0.0000097499	0.0031224842
151	9,284.92	0.0016013497	0.0000025643	0.0000074505	0.0027295640
152	9,285.12	0.0000211717	0.0000000004	0.0000050665	0.0022508880
153	9,272.32	-0.0013790388	0.0000019017	0.0000040538	0.0020133994
154	9,278.62	0.0006792659	0.0000004614	0.0000029042	0.0017041764
155	9,255.36	-0.0025097011	0.0000062986	0.0000039904	0.0019976035
156	9,257.54	0.0002355695	0.0000000555	0.0000027312	0.0016526473
157	9,279.45	0.0023629754	0.0000055837	0.0000036440	0.0019089301
158	9,297.77	0.0019731336	0.0000038933	0.0000037238	0.0019297076
159	9,293.70	-0.0004379845	0.0000001918	0.0000025936	0.0016104504
160	9,308.17	0.0015552988	0.0000024190	0.0000025377	0.0015930096
161	9,333.90	0.0027611534	0.0000076240	0.0000041653	0.0020409047

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162	9,372.78	0.0041566886	0.0000172781	0.0000083614	0.0028916047
163	9,322.95	-0.0053305200	0.0000284144	0.0000147784	0.0038442631
164	9,280.29	-0.0045870718	0.0000210412	0.0000167825	0.0040966421
165	9,290.05	0.0010517111	0.0000011061	0.0000117660	0.0034301654
166	9,282.21	-0.0008440714	0.0000007125	0.0000082289	0.0028686042
167	9,259.53	-0.0024470518	0.0000059881	0.0000075118	0.0027407709
168	9,379.96	0.0129221184	0.0001669811	0.0000585420	0.0076512749
169	9,295.67	-0.0090261950	0.0000814722	0.0000658797	0.0081166291
170	9,276.49	-0.0020661678	0.0000042690	0.0000461643	0.0067944293
171	9,161.66	-0.0124554566	0.0001551384	0.0000810360	0.0090019993
172	9,085.71	-0.0083249105	0.0000693041	0.0000772818	0.0087910066
173	9,093.26	0.0008315256	0.0000006914	0.0000527729	0.0072644945
174	9,026.62	-0.0073554393	0.0000541025	0.0000531984	0.0072937202
175	9,041.62	0.0016604012	0.0000027569	0.0000370571	0.0060874543
176	8,985.86	-0.0061867714	0.0000382761	0.0000374472	0.0061194111
177	9,110.39	0.0137629356	0.0001894184	0.0000860780	0.0092778218
178	9,155.13	0.0048991483	0.0000240017	0.0000662136	0.0081371711
179	9,109.27	-0.0050214269	0.0000252147	0.0000530939	0.0072865581
180	9,187.52	0.0085529825	0.0000731535	0.0000595130	0.0077144666
181	9,206.44	0.0020572524	0.0000042323	0.0000418232	0.0064670835
182	9,197.49	-0.0009726492	0.0000009460	0.0000287425	0.0053612022
183	9,175.88	-0.0023522970	0.0000055333	0.0000213155	0.0046168766
184	9,143.84	-0.0034976185	0.0000122333	0.0000184092	0.0042905991
185	9,143.84	0.0000000000	0.0000000000	0.0000125183	0.0035381187
186	9,074.15	-0.0076506344	0.0000585322	0.0000272427	0.0052194578
187	9,093.29	0.0021072622	0.0000044406	0.0000199460	0.0044660990
188	9,101.57	0.0009101942	0.0000008285	0.0000138284	0.0037186573
189	9,084.91	-0.0018321129	0.0000033566	0.0000104774	0.0032368881
190	9,070.59	-0.0015777032	0.0000024891	0.0000079212	0.0028144608
191	9,118.25	0.0052404479	0.0000274623	0.0000141743	0.0037648828
192	9,132.34	0.0015445740	0.0000023857	0.0000104020	0.0032252101
193	9,134.81	0.0002703804	0.0000000731	0.0000070967	0.0026639707
194	9,108.59	-0.0028754411	0.0000082682	0.0000074716	0.0027334219
195	9,100.11	-0.0009309952	0.0000008668	0.0000053580	0.0023147452
196	9,118.38	0.0020054443	0.0000040218	0.0000049304	0.0022204614
197	9,076.29	-0.0046265096	0.0000214046	0.0000102022	0.0031940843
198	9,105.47	0.0032099981	0.0000103041	0.0000102348	0.0031991853
199	9,094.37	-0.0012203518	0.0000014893	0.0000074362	0.0027269429
200	9,078.58	-0.0017376405	0.0000030194	0.0000060228	0.0024541463
201	9,078.38	-0.0000211559	0.0000000004	0.0000040957	0.0020237763
202	9,102.50	0.0026523641	0.0000070350	0.0000050363	0.0022441629
203	9,089.09	-0.0014740394	0.0000021728	0.0000041200	0.0020297673

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204	9,088.59	-0.0000543226	0.0000000030	0.0000028025	0.0016740710
205	9,086.04	-0.0002807136	0.0000000788	0.0000019309	0.0013895774
206	9,092.50	0.0007099084	0.0000005040	0.0000014743	0.0012142074
207	9,112.48	0.0021956564	0.0000048209	0.0000025452	0.0015953727
208	9,107.62	-0.0005341956	0.0000002854	0.0000018221	0.0013498379
209	9,059.69	-0.0052755774	0.0000278317	0.0000101452	0.0031851455
210	9,004.60	-0.0060994953	0.0000372038	0.0000188039	0.0043363502
211	9,004.63	0.0000027024	0.0000000000	0.0000127867	0.0035758463
212	9,042.36	0.0041813923	0.0000174840	0.0000142898	0.0037801896
213	9,079.66	0.0041165895	0.0000169463	0.0000151399	0.0038910032
214	9,058.58	-0.0023244018	0.0000054028	0.0000120240	0.0034675706
215	9,044.83	-0.0015182885	0.0000023052	0.0000089140	0.0029856348
216	9,044.65	-0.0000201420	0.0000000004	0.0000060617	0.0024620439
217	9,044.73	0.0000081626	0.0000000001	0.0000041220	0.0020302586
218	9,045.55	0.0000908376	0.0000000083	0.0000028056	0.0016749826
219	9,044.49	-0.0001172101	0.0000000137	0.0000019122	0.0013828165
220	8,989.77	-0.0060682038	0.0000368231	0.0000130837	0.0036171363
221	9,021.95	0.0035730756	0.0000127669	0.0000129823	0.0036030955
222	8,993.38	-0.0031712863	0.0000100571	0.0000120462	0.0034707665
223	8,964.16	-0.0032547829	0.0000105936	0.0000115814	0.0034031434
224	8,961.82	-0.0002604321	0.0000000678	0.0000078970	0.0028101683
225	8,997.08	0.0039258609	0.0000154124	0.0000103020	0.0032096657
226	9,017.36	0.0022522996	0.0000050729	0.0000086286	0.0029374550
227	9,015.06	-0.0002550531	0.0000000651	0.0000058883	0.0024265805
228	9,021.14	0.0006738185	0.0000004540	0.0000041493	0.0020369903
229	9,052.41	0.0034607344	0.0000119767	0.0000066541	0.0025795508
230	9,046.95	-0.0006039099	0.0000003647	0.0000046415	0.0021544100
231	9,073.60	0.0029412569	0.0000086510	0.0000059245	0.0024340348
232	9,139.69	0.0072572792	0.0000526681	0.0000208825	0.0045697341
233	9,173.04	0.0036427960	0.0000132700	0.0000184465	0.0042949351
234	9,198.62	0.0027840876	0.0000077511	0.0000150240	0.0038760759
235	9,236.59	0.0041198403	0.0000169731	0.0000156477	0.0039557152
236	9,299.72	0.0068118475	0.0000464013	0.0000254888	0.0050486463
237	9,348.57	0.0052390282	0.0000274474	0.0000261156	0.0051103402
238	9,239.71	-0.0117129228	0.0001371926	0.0000616602	0.0078524017
239	9,318.45	0.0084855697	0.0000720049	0.0000649705	0.0080604286
240	9,320.15	0.0001820186	0.0000000331	0.0000441905	0.0066475972
241	9,320.20	0.0000055383	0.0000000000	0.0000300496	0.0054817500
242	9,327.83	0.0008185165	0.0000006700	0.0000206481	0.0045440188
243	9,317.14	-0.0011463636	0.0000013141	0.0000144612	0.0038027937
244	9,265.34	-0.0055757184	0.0000310886	0.0000197820	0.0044476968
245	9,327.52	0.0066883343	0.0000447338	0.0000277666	0.0052694009

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246	9,367.99	0.0043295172	0.0000187447	0.0000248796	0.0049879443
247	9,309.37	-0.0062766684	0.0000393966	0.0000295250	0.0054336931
248	9,279.66	-0.0031965082	0.0000102177	0.0000233467	0.0048318389
249	9,308.32	0.0030831656	0.0000095059	0.0000189176	0.0043494396
250	9,278.51	-0.0032069398	0.0000102845	0.0000161550	0.0040193299
251	9,290.49	0.0012902469	0.0000016647	0.0000115181	0.0033938363
252	9,298.43	0.0008541536	0.0000007296	0.0000080658	0.0028400334
253	9,282.24	-0.0017427425	0.0000030372	0.0000064566	0.0025409891
254	9,257.07	-0.0027155641	0.0000073743	0.0000067503	0.0025981296
255	9,151.88	-0.0114281334	0.0001306022	0.0000463829	0.0068104995
256	9,170.07	0.0019856961	0.0000039430	0.0000328021	0.0057273144
257	9,145.64	-0.0026680557	0.0000071185	0.0000245834	0.0049581625
258	9,155.15	0.0010401649	0.0000010819	0.0000170629	0.0041307284
259	9,154.56	-0.0000651706	0.0000000042	0.0000116041	0.0034064854
260	9,156.48	0.0002104274	0.0000000443	0.0000079050	0.0028115808
261	9,160.73	0.0004634317	0.0000002148	0.0000054441	0.0023332632
262	9,151.51	-0.0010071024	0.0000010143	0.0000040266	0.0020066293
263	9,131.39	-0.0022001805	0.0000048408	0.0000042871	0.0020705351
264	9,131.39	0.0000000000	0.0000000000	0.0000029152	0.0017074070
265	9,139.51	0.0008881313	0.0000007888	0.0000022348	0.0014949150
266	9,144.85	0.0005840221	0.0000003411	0.0000016288	0.0012762408
267	9,160.64	0.0017255311	0.0000029775	0.0000020604	0.0014353968
268	9,183.15	0.0024537396	0.0000060208	0.0000033277	0.0018242027
269	9,222.62	0.0042897532	0.0000184020	0.0000081515	0.0028550799
270	9,208.05	-0.0015816539	0.0000025016	0.0000063435	0.0025186362
271	9,207.48	-0.0000613680	0.0000000038	0.0000043148	0.0020772107
272	9,207.66	0.0000196564	0.0000000004	0.0000029342	0.0017129480
273	9,275.00	0.0072867333	0.0000530965	0.0000189861	0.0043573070
274	9,282.35	0.0007914405	0.0000006264	0.0000131110	0.0036209122
275	9,281.58	-0.0000830515	0.0000000069	0.0000089177	0.0029862503
276	9,279.87	-0.0001841370	0.0000000339	0.0000060749	0.0024647271
277	9,244.68	-0.0037987224	0.0000144303	0.0000087486	0.0029578052
278	9,259.50	0.0016010527	0.0000025634	0.0000067693	0.0026017944
279	9,268.82	0.0010065303	0.0000010131	0.0000049273	0.0022197613
280	9,295.45	0.0028691381	0.0000082320	0.0000059848	0.0024463885
281	9,288.90	-0.0007050484	0.0000004971	0.0000042287	0.0020563913
282	9,273.84	-0.0016231448	0.0000026346	0.0000037186	0.0019283719
283	9,256.17	-0.0019069872	0.0000036366	0.0000036924	0.0019215547
284	9,244.45	-0.0012666533	0.0000016044	0.0000030242	0.0017390298
285	9,262.69	0.0019711647	0.0000038855	0.0000032998	0.0018165433
286	9,263.88	0.0001286216	0.0000000165	0.0000022492	0.0014997260
287	9,265.02	0.0001230860	0.0000000152	0.0000015343	0.0012386643

288	9,252.76	-0.0013239303	0.0000017528	0.0000016042	0.0012665741
289	9,283.52	0.0033189946	0.0000110157	0.0000046159	0.0021484634
290	9,284.98	0.0001570904	0.0000000247	0.0000031467	0.0017738955
291	9,339.38	0.0058416308	0.0000341247	0.0000130596	0.0036138134
292	9,337.72	-0.0001775824	0.0000000315	0.0000088907	0.0029817196
293	9,350.40	0.0013570594	0.0000018416	0.0000066350	0.0025758413
294	9,377.74	0.0029197452	0.0000085249	0.0000072397	0.0026906772
295	9,360.55	-0.0018349121	0.0000033669	0.0000060004	0.0024495784
296	9,364.48	0.0004190917	0.0000001756	0.0000041365	0.0020338386
297	9,390.84	0.0028117077	0.0000079057	0.0000053426	0.0023114160
298	9,367.87	-0.0024489322	0.0000059973	0.0000055521	0.0023562945
299	9,358.31	-0.0010215921	0.0000010437	0.0000041094	0.0020271686
300	9,360.33	0.0002162557	0.0000000468	0.0000028094	0.0016761163
301	9,374.45	0.0015068390	0.0000022706	0.0000026369	0.0016238686
302	9,384.71	0.0010943287	0.0000011976	0.0000021763	0.0014752434
303	9,408.47	0.0025277801	0.0000063897	0.0000035246	0.0018773941
304	9,387.34	-0.0022482146	0.0000050545	0.0000040142	0.0020035378
305	9,418.15	0.0032774530	0.0000107417	0.0000061670	0.0024833394
306	9,418.15	0.0000000000	0.0000000000	0.0000041935	0.0020478141
307	9,418.15	0.0000000000	0.0000000000	0.0000028516	0.0016886708
308	9,495.26	0.0081540911	0.0000664892	0.0000232156	0.0048182610
309	9,529.29	0.0035770664	0.0000127954	0.0000198812	0.0044588298
310	9,489.57	-0.0041767932	0.0000174456	0.0000191018	0.0043705587
311	9,485.12	-0.0004688656	0.0000002198	0.0000130596	0.0036138013
312	9,480.92	-0.0004427852	0.0000001961	0.0000089432	0.0029905250
313	9,495.56	0.0015422001	0.0000023784	0.0000068425	0.0026158144
314	9,476.09	-0.0020520928	0.0000042111	0.0000060004	0.0024495789
315	9,486.15	0.0010604771	0.0000011246	0.0000044402	0.0021071718
316	9,496.41	0.0010817114	0.0000011701	0.0000033937	0.0018422132
317	9,502.66	0.0006571726	0.0000004319	0.0000024459	0.0015639533
318	9,487.81	-0.0015636348	0.0000024450	0.0000024456	0.0015638514
319	9,493.38	0.0005868848	0.0000003444	0.0000017732	0.0013316336
320	9,494.70	0.0001394100	0.0000000194	0.0000012120	0.0011009214
321	9,543.50	0.0051261930	0.0000262779	0.0000092331	0.0030386004
322	9,569.77	0.0027486492	0.0000075551	0.0000086961	0.0029489195
323	9,576.55	0.0007083672	0.0000005018	0.0000060739	0.0024645358
324	9,596.59	0.0020903497	0.0000043696	0.0000055285	0.0023512840
325	9,615.88	0.0020084757	0.0000040340	0.0000050503	0.0022472821
326	9,674.68	0.0060964065	0.0000371662	0.0000153274	0.0039150177
327	9,755.38	0.0083064906	0.0000689978	0.0000325019	0.0057010436
328	9,580.97	-0.0180400405	0.0003254431	0.0001262431	0.0112357942
329	9,556.10	-0.0025992246	0.0000067560	0.0000880072	0.0093812152

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330	9,574.96	0.0019716194	0.0000038873	0.0000610888	0.0078159341
331	9,541.14	-0.0035378689	0.0000125165	0.0000455457	0.0067487544
332	9,560.96	0.0020751386	0.0000043062	0.0000323491	0.0056876226
333	9,525.40	-0.0037263419	0.0000138856	0.0000264408	0.0051420574
334	9,512.38	-0.0013677036	0.0000018706	0.0000185783	0.0043102563
335	9,476.39	-0.0037913900	0.0000143746	0.0000172331	0.0041512810
336	9,500.78	0.0025704552	0.0000066072	0.0000138328	0.0037192537
337	9,488.11	-0.0013343016	0.0000017804	0.0000099761	0.0031584889
338	9,455.98	-0.0033923344	0.0000115079	0.0000104663	0.0032351590
339	9,476.00	0.0021153886	0.0000044749	0.0000085490	0.0029238691
340	9,475.61	-0.0000409603	0.0000000017	0.0000058139	0.0024111956
341	9,490.61	0.0015811938	0.0000025002	0.0000047535	0.0021802484
342	9,441.51	-0.0051864946	0.0000268997	0.0000118403	0.0034409710
343	9,439.15	-0.0002496725	0.0000000623	0.0000080713	0.0028410102
344	9,445.47	0.0006688485	0.0000004474	0.0000056317	0.0023731129
345	9,460.85	0.0016269716	0.0000026470	0.0000046766	0.0021625411
346	9,450.10	-0.0011368856	0.0000012925	0.0000035937	0.0018957004
347	9,470.16	0.0021200569	0.0000044946	0.0000038820	0.0019702760
348	9,466.21	-0.0004165799	0.0000001735	0.0000026953	0.0016417320
349	9,517.93	0.0054486636	0.0000296879	0.0000113329	0.0033664421
350	9,481.37	-0.0038481068	0.0000148079	0.0000124449	0.0035277373
351	9,484.05	0.0002820513	0.0000000796	0.0000084880	0.0029134189
352	9,506.42	0.0023558202	0.0000055499	0.0000075478	0.0027473280
353	9,541.07	0.0036380809	0.0000132356	0.0000093679	0.0030607048
354	9,580.73	0.0041482304	0.0000172078	0.0000118767	0.0034462563
355	9,575.62	-0.0005330219	0.0000002841	0.0000081671	0.0028578068
356	9,590.52	0.0015546914	0.0000024171	0.0000063271	0.0025153651
357	9,567.83	-0.0023688254	0.0000056113	0.0000060980	0.0024694187
358	9,575.47	0.0007978624	0.0000006366	0.0000043504	0.0020857532
359	9,593.22	0.0018524784	0.0000034317	0.0000040564	0.0020140471
360	9,610.36	0.0017845962	0.0000031848	0.0000037775	0.0019435722
361	9,607.38	-0.0003095490	0.0000000958	0.0000025993	0.0016122482
362	9,588.90	-0.0019257505	0.0000037085	0.0000029543	0.0017188016
363	9,627.56	0.0040234382	0.0000161881	0.0000071891	0.0026812473
364	9,636.06	0.0008826833	0.0000007791	0.0000051379	0.0022666938
365	9,620.53	-0.0016126987	0.0000026008	0.0000043260	0.0020799105
366	9,655.62	0.0036404835	0.0000132531	0.0000071827	0.0026800554
367	9,655.62	-0.0000001717	0.0000000000	0.0000048842	0.0022100303
368	9,652.60	-0.0003124524	0.0000000976	0.0000033525	0.0018309887
369	9,646.28	-0.0006547171	0.0000004287	0.0000024169	0.0015546327
370	9,663.42	0.0017748995	0.0000031503	0.0000026516	0.0016283630
371	9,678.47	0.0015563474	0.0000024222	0.0000025782	0.0016056695

372	9,698.52	0.0020694308	0.0000042825	0.0000031236	0.0017673632
373	9,718.48	0.0020556259	0.0000042256	0.0000034762	0.0018644626
374	9,766.46	0.0049252624	0.0000242582	0.0000101265	0.0031822095
375	9,814.62	0.0049187665	0.0000241943	0.0000146282	0.0038246772
376	9,874.55	0.0060878689	0.0000370621	0.0000218070	0.0046698001
377	9,795.59	-0.0080285126	0.0000644570	0.0000354550	0.0059544124
378	9,824.35	0.0029316154	0.0000085944	0.0000268596	0.0051826264
379	9,806.26	-0.0018429131	0.0000033963	0.0000193514	0.0043990186
380	9,736.31	-0.0071585842	0.0000512453	0.0000295574	0.0054366748
381	9,769.52	0.0034047983	0.0000115927	0.0000238087	0.0048794162
382	9,769.54	0.0000019146	0.0000000000	0.0000161899	0.0040236698
383	9,809.69	0.0041015121	0.0000168224	0.0000163923	0.0040487422
384	9,811.12	0.0001459061	0.0000000213	0.0000111536	0.0033396984
385	9,794.56	-0.0016896010	0.0000028548	0.0000084980	0.0029151258
386	9,809.64	0.0015385297	0.0000023671	0.0000065361	0.0025565749
387	9,840.47	0.0031379040	0.0000098464	0.0000075954	0.0027559740
388	9,831.36	-0.0009262905	0.0000008580	0.0000054394	0.0023322589
389	9,774.06	-0.0058447371	0.0000341610	0.0000146303	0.0038249599
390	9,820.37	0.0047270681	0.0000223452	0.0000170991	0.0041351024
391	9,831.60	0.0011424930	0.0000013053	0.0000120451	0.0034705996
392	9,834.48	0.0002928725	0.0000000858	0.0000082181	0.0028667211
393	9,831.83	-0.0002693240	0.0000000725	0.0000056115	0.0023688631
394	9,819.62	-0.0012431101	0.0000015453	0.0000043103	0.0020761338
395	9,782.64	-0.0037731426	0.0000142366	0.0000074867	0.0027361906
396	9,756.35	-0.0026904174	0.0000072383	0.0000074073	0.0027216270
397	9,768.07	0.0012006985	0.0000014417	0.0000054983	0.0023448388
398	9,737.56	-0.0031287951	0.0000097894	0.0000068714	0.0026213389
399	9,771.09	0.0034376708	0.0000118176	0.0000084542	0.0029076089
400	9,790.93	0.0020283638	0.0000041143	0.0000070654	0.0026580843
401	9,786.26	-0.0004775068	0.0000002280	0.0000048774	0.0022084937
402	9,766.11	-0.0020606485	0.0000042463	0.0000046755	0.0021622833
403	9,830.49	0.0065699674	0.0000431645	0.0000169920	0.0041221293
404	9,861.33	0.0031323265	0.0000098115	0.0000146942	0.0038333010
405	9,881.39	0.0020321173	0.0000041295	0.0000113135	0.0033635537
406	9,900.63	0.0019452781	0.0000037841	0.0000089041	0.0029839722
407	9,964.48	0.0064289232	0.0000413311	0.0000192807	0.0043909815
408	9,980.05	0.0015613463	0.0000024378	0.0000138910	0.0037270612
409	10,009.29	0.0029256093	0.0000085592	0.0000121848	0.0034906748
410	10,084.69	0.0075043722	0.0000563156	0.0000263067	0.0051290022
411	10,199.42	0.0113119689	0.0001279606	0.0000588359	0.0076704587
412	10,340.37	0.0137252226	0.0001883817	0.0001002906	0.0100145191
413	10,410.07	0.0067183826	0.0000451367	0.0000826413	0.0090907280

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

414	10,479.97	0.0066916751	0.0000447785	0.0000705252	0.0083979303
415	10,949.77	0.0438530663	0.0019230914	0.0006633464	0.0257555123
416	10,475.17	-0.0443109594	0.0019634611	0.0010793831	0.0328539666
417	10,475.37	0.0000191024	0.0000000004	0.0007339806	0.0270920771
418	10,349.75	-0.0120643878	0.0001455495	0.0005456827	0.0233598514
419	10,351.01	0.0001220174	0.0000000149	0.0003710690	0.0192631506
420	10,365.11	0.0013605090	0.0000018510	0.0002529192	0.0159034341
421	10,375.20	0.0009729022	0.0000009465	0.0001722880	0.0131258508
422	10,370.32	-0.0004698045	0.0000002207	0.0001172264	0.0108271160
423	10,285.20	-0.0082425412	0.0000679395	0.0001014546	0.0100724682
424	10,064.68	-0.0216729867	0.0004697184	0.0002192990	0.0148087478
425	10,070.07	0.0005347095	0.0000002859	0.0001492148	0.0122153518
426	10,015.59	-0.0054247545	0.0000294280	0.0001108830	0.0105301009
427	10,070.21	0.0054392292	0.0000295852	0.0000848677	0.0092123681
428	10,119.59	0.0048913210	0.0000239250	0.0000653661	0.0080849280
429	10,165.16	0.0044930407	0.0000201874	0.0000509089	0.0071350469
430	10,175.64	0.0010309100	0.0000010628	0.0000349581	0.0059125406
431	10,235.28	0.0058434366	0.0000341458	0.0000346982	0.0058905155
432	10,230.17	-0.0004993562	0.0000002494	0.0000236746	0.0048656502
433	10,199.97	-0.0029559642	0.0000087377	0.0000188948	0.0043468111
434	10,225.53	0.0025028005	0.0000062640	0.0000148529	0.0038539492
435	10,256.00	0.0029751660	0.0000088516	0.0000129325	0.0035961792
436	10,319.47	0.0061694837	0.0000380625	0.0000209741	0.0045797503
437	10,410.58	0.0087900385	0.0000772648	0.0000389871	0.0062439671
438	10,215.36	-0.0189297275	0.0003583346	0.0001411783	0.0118818480
439	10,264.50	0.0047986104	0.0000230267	0.0001033698	0.0101670932
440	10,107.88	-0.0153761410	0.0002364257	0.0001459477	0.0120808808
441	10,050.13	-0.0057296099	0.0000328284	0.0001097495	0.0104761405
442	10,057.85	0.0007675699	0.0000005892	0.0000748182	0.0086497518
443	10,047.48	-0.0010313874	0.0000010638	0.0000512168	0.0071565902
444	10,145.21	0.0096801746	0.0000937058	0.0000648133	0.0080506685
445	10,102.46	-0.0042229875	0.0000178336	0.0000497798	0.0070554786
446	10,138.35	0.0035464344	0.0000125772	0.0000378750	0.0061542629
447	10,121.04	-0.0017088604	0.0000029202	0.0000266894	0.0051661816
448	10,090.26	-0.0030463508	0.0000092803	0.0000211185	0.0045954864
449	10,109.70	0.0019249055	0.0000037053	0.0000155463	0.0039428746
450	10,109.68	-0.0000014514	0.0000000000	0.0000105715	0.0032513778
451	10,094.77	-0.0014765630	0.0000021802	0.0000078863	0.0028082499
452	10,074.57	-0.0020030919	0.0000040124	0.0000066466	0.0025781044
453	10,069.50	-0.0005030871	0.0000002531	0.0000046007	0.0021449229
454	10,025.32	-0.0043971905	0.0000193353	0.0000093158	0.0030521735
455	9,965.62	-0.0059724949	0.0000356707	0.0000177493	0.0042129967

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456	9,985.47	0.0019891663	0.0000039568	0.0000133357	0.0036518109
457	10,005.29	0.0019832965	0.0000039335	0.0000103270	0.0032135650
458	10,049.42	0.0044009774	0.0000193686	0.0000132203	0.0036359748
459	10,184.94	0.0133950443	0.0001794272	0.0000664065	0.0081490196
460	10,079.35	-0.0104206520	0.0001085900	0.0000799052	0.0089389726
461	10,051.25	-0.0027924601	0.0000077978	0.0000568309	0.0075386248
462	10,055.55	0.0004277715	0.0000001830	0.0000387035	0.0062212172
463	10,070.95	0.0015306180	0.0000023428	0.0000270681	0.0052027015
464	10,093.16	0.0022031654	0.0000048539	0.0000199596	0.0044676135
465	10,038.13	-0.0054678287	0.0000298972	0.0000231396	0.0048103634
466	9,990.45	-0.0047610832	0.0000226679	0.0000229887	0.0047946488
467	9,964.51	-0.0026001057	0.0000067605	0.0000177957	0.0042184906
468	10,005.45	0.0041008358	0.0000168169	0.0000174824	0.0041812013
469	10,023.34	0.0017858102	0.0000031891	0.0000129086	0.0035928512
470	10,001.37	-0.0021939979	0.0000048136	0.0000103182	0.0032121947
471	10,023.24	0.0021841329	0.0000047704	0.0000085429	0.0029228261
472	10,070.99	0.0047529184	0.0000225902	0.0000130381	0.0036108247
473	10,105.00	0.0033718332	0.0000113693	0.0000125040	0.0035361052
474	10,055.84	-0.0048777115	0.0000237921	0.0000161162	0.0040144999
475	10,073.25	0.0017302972	0.0000029939	0.0000119171	0.0034521123
476	10,051.48	-0.0021638634	0.0000046823	0.0000096020	0.0030987016
477	10,065.22	0.0013661120	0.0000018663	0.0000071265	0.0026695563
478	10,064.09	-0.0001125035	0.0000000127	0.0000048501	0.0022022923
479	10,044.60	-0.0019379156	0.0000037555	0.0000044998	0.0021212797
480	10,024.36	-0.0020170543	0.0000040685	0.0000043618	0.0020884935
481	10,025.73	0.0001363875	0.0000000186	0.0000029720	0.0017239432
482	10,029.62	0.0003883078	0.0000001508	0.0000020692	0.0014384704
483	9,994.64	-0.0034942672	0.0000122099	0.0000053142	0.0023052599
484	9,928.12	-0.0066779794	0.0000445954	0.0000178842	0.0042289718
485	9,865.19	-0.0063582806	0.0000404277	0.0000250981	0.0050098036
486	9,817.60	-0.0048360086	0.0000233870	0.0000245506	0.0049548525
487	9,740.62	-0.0078713157	0.0000619576	0.0000365208	0.0060432457
488	9,729.98	-0.0010930456	0.0000011947	0.0000252165	0.0050216009
489	9,755.32	0.0026011403	0.0000067659	0.0000193123	0.0043945764
490	9,830.26	0.0076523868	0.0000585590	0.0000318713	0.0056454630
491	9,823.77	-0.0006604450	0.0000004362	0.0000218120	0.0046703353
492	9,855.11	0.0031851749	0.0000101453	0.0000180787	0.0042519043
493	9,915.55	0.0061139520	0.0000373804	0.0000242552	0.0049249610
494	9,837.62	-0.0078905418	0.0000622606	0.0000364170	0.0060346476
495	9,850.26	0.0012840636	0.0000016488	0.0000252912	0.0050290320
496	9,806.43	-0.0044590098	0.0000198828	0.0000235605	0.0048539135
497	9,860.39	0.0054868886	0.0000301059	0.0000256550	0.0050650792

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498	9,840.48	-0.0020206902	0.0000040832	0.0000187520	0.0043303624
499	9,839.51	-0.0000993776	0.0000000099	0.0000127545	0.0035713508
500	9,825.54	-0.0014202254	0.0000020170	0.0000093185	0.0030526291
501	9,760.07	-0.0066862316	0.0000447057	0.0000206424	0.0045433943
502	9,667.43	-0.0095365997	0.0000909467	0.0000431398	0.0065680902
503	9,625.42	-0.0043551533	0.0000189674	0.0000354046	0.0059501786
504	9,590.47	-0.0036373031	0.0000132300	0.0000283087	0.0053205955
505	9,445.11	-0.0152730553	0.0002332662	0.0000938951	0.0096899500
506	9,455.49	0.0010987591	0.0000012073	0.0000642350	0.0080146750
507	9,485.61	0.0031799536	0.0000101121	0.0000469157	0.0068495025
508	9,364.49	-0.0128506927	0.0001651403	0.0000847476	0.0092058439
509	9,384.66	0.0021510785	0.0000046271	0.0000591090	0.0076882395
510	9,375.58	-0.0009677477	0.0000009365	0.0000404938	0.0063634762
511	9,494.63	0.0126178516	0.0001592102	0.0000784831	0.0088590666
512	9,470.45	-0.0025500880	0.0000065029	0.0000554494	0.0074464371
513	9,504.35	0.0035739025	0.0000127728	0.0000417929	0.0064647427
514	9,429.75	-0.0078799343	0.0000620934	0.0000482890	0.0069490321
515	9,409.74	-0.0021251362	0.0000045162	0.0000342817	0.0058550608
516	9,444.52	0.0036896128	0.0000136132	0.0000276678	0.0052600208
517	9,419.83	-0.0026177904	0.0000068528	0.0000210070	0.0045833417
518	9,369.76	-0.0053287451	0.0000283955	0.0000233713	0.0048343916
519	9,384.59	0.0015815194	0.0000025012	0.0000166929	0.0040856943
520	9,387.48	0.0003077452	0.0000000947	0.0000113815	0.0033736444
521	9,315.03	-0.0077477687	0.0000600279	0.0000269483	0.0051911789
522	9,343.09	0.0030070336	0.0000090423	0.0000212184	0.0046063424
523	9,302.51	-0.0043521494	0.0000189412	0.0000204897	0.0045265540
524	9,252.41	-0.0054001311	0.0000291614	0.0000232646	0.0048233435
525	9,213.47	-0.0042179003	0.0000177907	0.0000215130	0.0046382083
526	9,262.97	0.0053586731	0.0000287154	0.0000238177	0.0048803426
527	9,248.55	-0.0015585321	0.0000024290	0.0000169734	0.0041198730
528	9,195.40	-0.0057628600	0.0000332106	0.0000221693	0.0047084241
529	9,234.63	0.0042571083	0.0000181230	0.0000208744	0.0045688561
530	9,235.05	0.0000449632	0.0000000020	0.0000141953	0.0037676611
531	9,219.66	-0.0016678365	0.0000027817	0.0000105429	0.0032469864
532	9,223.17	0.0003809064	0.0000001451	0.0000072156	0.0026861897
533	9,234.00	0.0011731927	0.0000013764	0.0000053471	0.0023123711
534	9,233.88	-0.0000124146	0.0000000002	0.0000036361	0.0019068430
535	9,254.94	0.0022784165	0.0000051912	0.0000041337	0.0020331484
536	9,293.35	0.0041414888	0.0000171519	0.0000082995	0.0028808902
537	9,320.56	0.0029232639	0.0000085455	0.0000083782	0.0028945173
538	9,293.43	-0.0029145460	0.0000084946	0.0000084155	0.0029009415
539	9,263.47	-0.0032292885	0.0000104283	0.0000090596	0.0030099121

Pengukuran var..., SandiJanuar Pribadi, FE UI, 2008.

540	9,227.85	-0.0038526119	0.0000148426	0.0000109101	0.0033030511
541	9,169.58	-0.0063344651	0.0000401254	0.0000202590	0.0045010047
542	9,181.65	0.0013148619	0.0000017289	0.0000143294	0.0037854174
543	9,192.96	0.0012317184	0.0000015171	0.0000102295	0.0031983532
544	9,196.88	0.0004263900	0.0000001818	0.0000070142	0.0026484361
545	9,197.83	0.0001030454	0.0000000106	0.0000047731	0.0021847342
546	9,304.00	0.0114770819	0.0001317234	0.0000453972	0.0067377425
547	9,373.56	0.0074476699	0.0000554678	0.0000486198	0.0069727878
548	9,298.84	-0.0080025966	0.0000640416	0.0000535547	0.0073181104
549	9,237.69	-0.0065978187	0.0000435312	0.0000503472	0.0070955769
550	9,190.18	-0.0051561750	0.0000265861	0.0000427437	0.0065378642
551	9,132.73	-0.0062714092	0.0000393306	0.0000416515	0.0064537956
552	9,143.28	0.0011549767	0.0000013340	0.0000287499	0.0053618911
553	9,162.93	0.0021464381	0.0000046072	0.0000210242	0.0045852174
554	9,128.52	-0.0037627988	0.0000141587	0.0000188272	0.0043390365
555	9,128.14	-0.0000411049	0.0000000017	0.0000128031	0.0035781367
556	9,116.38	-0.0012896748	0.0000016633	0.0000092383	0.0030394615
557	9,080.52	-0.0039405096	0.0000155276	0.0000112509	0.0033542360
558	9,105.61	0.0027589390	0.0000076117	0.0000100864	0.0031759045
559	9,073.32	-0.0035530832	0.0000126244	0.0000108985	0.0033012936
560	9,021.54	-0.0057226637	0.0000327489	0.0000178906	0.0042297338
561	9,099.84	0.0086421238	0.0000746863	0.0000360653	0.0060054357
562	9,139.80	0.0043813161	0.0000191959	0.0000306671	0.0055377860
563	9,160.50	0.0022619524	0.0000051164	0.0000224909	0.0047424537
564	9,040.56	-0.0131794075	0.0001736968	0.0000708768	0.0084188336
565	8,999.86	-0.0045120661	0.0000203587	0.0000547110	0.0073966880
566	8,999.45	-0.0000460075	0.0000000021	0.0000372042	0.0060995207
567	9,005.49	0.0006710708	0.0000004503	0.0000254429	0.0050440987
568	9,000.55	-0.0005486298	0.0000003010	0.0000173975	0.0041710325
569	8,983.66	-0.0018784884	0.0000035287	0.0000129595	0.0035999303
570	8,989.89	0.0006931402	0.0000004804	0.0000089662	0.0029943614
571	8,992.36	0.0002757327	0.0000000760	0.0000061213	0.0024741353
572	9,004.38	0.0013355783	0.0000017838	0.0000047333	0.0021756197
573	8,973.08	-0.0034829208	0.0000121307	0.0000071005	0.0026646753
574	8,969.18	-0.0004338596	0.0000001882	0.0000048886	0.0022110113
575	8,895.15	-0.0082880058	0.0000686910	0.0000253054	0.0050304434
576	8,900.03	0.0005477192	0.0000003000	0.0000173036	0.0041597649
577	8,820.45	-0.0089813313	0.0000806643	0.0000375791	0.0061301760
578	8,839.45	0.0021520334	0.0000046312	0.0000270358	0.0051995922
579	8,803.67	-0.0040564850	0.0000164551	0.0000236499	0.0048631202
580	8,800.05	-0.0004107896	0.0000001687	0.0000161360	0.0040169587
581	8,785.13	-0.0016969272	0.0000028796	0.0000118939	0.0034487550

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582	8,763.39	-0.0024778809	0.0000061399	0.0000100526	0.0031705875
583	8,768.57	0.0005907051	0.0000003489	0.0000069474	0.0026358004
584	8,797.39	0.0032819114	0.0000107709	0.0000081710	0.0028584897
585	8,786.62	-0.0012258651	0.0000015027	0.0000060371	0.0024570579
586	8,732.01	-0.0062340058	0.0000388628	0.0000165414	0.0040671066
587	8,747.56	0.0017792844	0.0000031659	0.0000122612	0.0035015989
588	8,722.80	-0.0028349206	0.0000080368	0.0000109094	0.0033029351
589	8,742.38	0.0022427561	0.0000050300	0.0000090280	0.0030046571
590	8,728.28	-0.0016145851	0.0000026069	0.0000069732	0.0026406853
591	9,004.41	0.0311466022	0.0009701108	0.0003151773	0.0177532322
592	9,314.37	0.0338433439	0.0011453719	0.0005808395	0.0241006130
593	9,035.36	-0.0304122420	0.0009249045	0.0006909403	0.0262857437
594	9,125.00	0.0098719746	0.0000974559	0.0005010253	0.0223835945
595	9,152.36	0.0029943871	0.0000089664	0.0003435664	0.0185355453
596	9,315.31	0.0176465366	0.0003114003	0.0003332733	0.0182557733
597	9,295.57	-0.0021209756	0.0000044985	0.0002280653	0.0151018326
598	9,354.54	0.0063237465	0.0000399898	0.0001678812	0.0129568963
599	9,389.63	0.0037440455	0.0000140179	0.0001186449	0.0108924245
600	9,280.63	-0.0116759473	0.0001363277	0.0001243034	0.0111491443
601	9,250.36	-0.0032669047	0.0000106727	0.0000879416	0.0093777171
602	9,203.10	-0.0051225849	0.0000262409	0.0000681974	0.0082581689
603	9,194.60	-0.0009233575	0.0000008526	0.0000466470	0.0068298630
604	9,265.49	0.0076800572	0.0000589833	0.0000505946	0.0071129901
605	9,295.28	0.0032102756	0.0000103059	0.0000377022	0.0061402138
606	9,255.52	-0.0042873557	0.0000183814	0.0000315196	0.0056142290
607	9,325.56	0.0075388143	0.0000568337	0.0000396201	0.0062944497
608	9,372.55	0.0050270277	0.0000252710	0.0000350284	0.0059184785
609	9,414.84	0.0045018906	0.0000202670	0.0000303048	0.0055049750
610	9,429.53	0.0015587208	0.0000024296	0.0000213847	0.0046243600
611	9,490.22	0.0064157846	0.0000411623	0.0000277135	0.0052643644
612	9,505.62	0.0016212497	0.0000026285	0.0000196863	0.0044369254
613	9,424.28	-0.0085944748	0.0000738650	0.0000370235	0.0060846929
614	9,320.05	-0.0111210058	0.0001236768	0.0000647525	0.0080468962
615	9,361.10	0.0043945523	0.0000193121	0.0000502116	0.0070860140
616	9,384.89	0.0025381160	0.0000064420	0.0000362053	0.0060170869
617	9,353.62	-0.0033373514	0.0000111379	0.0000281838	0.0053088379
618	9,343.51	-0.0010812273	0.0000011691	0.0000195391	0.0044203002
619	9,395.26	0.0055234033	0.0000305080	0.0000230491	0.0048009490
620	9,404.21	0.0009520113	0.0000009063	0.0000159634	0.0039954249
621	9,389.48	-0.0015674817	0.0000024570	0.0000116414	0.0034119445
622	9,352.37	-0.0039600070	0.0000156817	0.0000129343	0.0035964229
623	9,338.28	-0.0015082274	0.0000022747	0.0000095232	0.0030859707

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624	9,280.24	-0.0062345559	0.0000388697	0.0000189141	0.0043490328
625	9,140.51	-0.0151709636	0.0002301581	0.0000865122	0.0093011925
626	9,075.52	-0.0071357131	0.0000509184	0.0000751222	0.0086673048
627	9,083.72	0.0009038607	0.0000008170	0.0000513445	0.0071655081
628	9,164.53	0.0088566885	0.0000784409	0.0000600154	0.0077469582
629	9,084.94	-0.0087227210	0.0000760859	0.0000651579	0.0080720457
630	9,038.44	-0.0051320667	0.0000263381	0.0000527356	0.0072619269
631	9,050.35	0.0013177207	0.0000017364	0.0000364158	0.0060345538
632	9,040.30	-0.0011118476	0.0000012362	0.0000251584	0.0050158107
633	9,089.47	0.0054240669	0.0000294205	0.0000265222	0.0051499751
634	9,215.29	0.0137484555	0.0001890200	0.0000785215	0.0088612378
635	9,275.54	0.0065158572	0.0000424564	0.0000669807	0.0081841731
636	9,260.35	-0.0016388642	0.0000026859	0.0000464063	0.0068122206
637	9,244.40	-0.0017239264	0.0000029719	0.0000325073	0.0057015202
638	9,157.33	-0.0094625931	0.0000895407	0.0000507580	0.0071244649
639	9,152.54	-0.0005233198	0.0000002739	0.0000346031	0.0058824380
640	9,177.43	0.0027150552	0.0000073715	0.0000258890	0.0050881214
641	9,124.45	-0.0057886409	0.0000335084	0.0000283272	0.0053223287
642	9,130.84	0.0006993014	0.0000004890	0.0000194190	0.0044066962
643	9,083.39	-0.0052101551	0.0000271457	0.0000218915	0.0046788385
644	9,084.59	0.0001323333	0.0000000175	0.0000148918	0.0038589952
645	9,070.25	-0.0015793953	0.0000024945	0.0000109247	0.0033052520
646	9,090.43	0.0022222929	0.0000049386	0.0000090091	0.0030015225
647	9,100.63	0.0011206769	0.0000012559	0.0000065281	0.0025550160
648	9,120.42	0.0021725653	0.0000047200	0.0000059495	0.0024391649
649	9,103.44	-0.0018634507	0.0000034724	0.0000051569	0.0022708722
650	9,077.43	-0.0028614058	0.0000081876	0.0000061267	0.0024752194
651	9,106.62	0.0032112361	0.0000103120	0.0000074660	0.0027324010
652	9,074.15	-0.0035728143	0.0000127650	0.0000091617	0.0030268286
653	9,069.62	-0.0004993539	0.0000002494	0.0000063097	0.0025119203
654	9,094.46	0.0027357755	0.0000074845	0.0000066857	0.0025856634
655	9,092.82	-0.0001801604	0.0000000325	0.0000045566	0.0021346269
656	9,098.29	0.0006004404	0.0000003605	0.0000032139	0.0017927295
657	9,093.04	-0.0005765524	0.0000003324	0.0000022918	0.0015138724
658	9,074.78	-0.0020103213	0.0000040414	0.0000028517	0.0016886906
659	9,065.42	-0.0010318856	0.0000010648	0.0000022799	0.0015099244
660	9,075.87	0.0011523294	0.0000013279	0.0000019752	0.0014054284
661	9,073.39	-0.0002731170	0.0000000746	0.0000013670	0.0011691986
662	9,125.53	0.0057290057	0.0000328215	0.0000114325	0.0033811920
663	9,139.93	0.0015768729	0.0000024865	0.0000085698	0.0029274155
664	9,137.89	-0.0002233064	0.0000000499	0.0000058434	0.0024173115
665	9,094.84	-0.0047213016	0.0000222907	0.0000111065	0.0033326459

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666	9,084.35	-0.0011545679	0.0000013330	0.0000079790	0.0028247138
667	9,097.94	0.0014950297	0.0000022351	0.0000061410	0.0024780965
668	9,078.43	-0.0021467604	0.0000046086	0.0000056506	0.0023770990
669	9,079.70	0.0001396053	0.0000000195	0.0000038486	0.0019617963
670	9,079.34	-0.0000394858	0.0000000016	0.0000026176	0.0016178928
671	9,077.30	-0.0002243650	0.0000000503	0.0000017961	0.0013401721
672	9,090.55	0.0014585926	0.0000021275	0.0000019021	0.0013791734
673	9,101.24	0.0011751633	0.0000013810	0.0000017354	0.0013173321
674	9,126.56	0.0027781405	0.0000077181	0.0000036498	0.0019104523
675	9,140.31	0.0015056212	0.0000022669	0.0000032073	0.0017908907
676	9,150.13	0.0010730163	0.0000011514	0.0000025494	0.0015966820
677	9,115.10	-0.0038349876	0.0000147071	0.0000064399	0.0025376897
678	9,137.57	0.0024613410	0.0000060582	0.0000063177	0.0025135104
679	9,138.64	0.0001176789	0.0000000138	0.0000043005	0.0020737625
680	9,147.58	0.0009781004	0.0000009567	0.0000032305	0.0017973513
681	9,165.45	0.0019509744	0.0000038063	0.0000034147	0.0018479007
682	9,138.36	-0.0029594464	0.0000087583	0.0000051247	0.0022637766
683	9,177.36	0.0042579379	0.0000181300	0.0000092864	0.0030473590
684	9,194.36	0.0018512924	0.0000034273	0.0000074115	0.0027224035
685	9,234.44	0.0043490566	0.0000189143	0.0000110924	0.0033305226
686	9,199.41	-0.0037998840	0.0000144391	0.0000121633	0.0034875976
687	9,213.54	0.0015346995	0.0000023553	0.0000090248	0.0030041248
688	9,229.95	0.0017787820	0.0000031641	0.0000071493	0.0026738253
689	9,196.20	-0.0036627163	0.0000134155	0.0000091545	0.0030256420
690	9,217.43	0.0023053258	0.0000053145	0.0000079257	0.0028152646
691	9,218.71	0.0001390465	0.0000000193	0.0000053957	0.0023228588
692	9,206.39	-0.0013369032	0.0000017873	0.0000042410	0.0020593681
693	9,224.76	0.0019936502	0.0000039746	0.0000041558	0.0020385689
694	9,224.27	-0.0000541242	0.0000000029	0.0000028269	0.0016813257
695	9,220.01	-0.0004613291	0.0000002128	0.0000019904	0.0014108034
696	9,219.54	-0.0000505340	0.0000000026	0.0000013543	0.0011637294
697	9,203.73	-0.0017170117	0.0000029481	0.0000018643	0.0013653946
698	9,202.77	-0.0001038110	0.0000000108	0.0000012712	0.0011274636
699	9,154.63	-0.0052449785	0.0000275098	0.0000096675	0.0031092659
700	9,156.95	0.0002528387	0.0000000639	0.0000065944	0.0025679525
701	9,159.27	0.0002542602	0.0000000646	0.0000045049	0.0021224669
702	9,169.41	0.0011058642	0.0000012229	0.0000034546	0.0018586684
703	9,160.64	-0.0009571410	0.0000009161	0.0000026423	0.0016255211
704	9,165.46	0.0005259678	0.0000002766	0.0000018853	0.0013730631
705	9,130.32	-0.0038408561	0.0000147522	0.0000060027	0.0024500412
706	9,108.43	-0.0024003816	0.0000057618	0.0000059256	0.0024342603
707	9,093.53	-0.0016377799	0.0000026823	0.0000048878	0.0022108296

708	9,101.07	0.0008288213	0.0000006869	0.0000035435	0.0018824197
709	9,114.66	0.0014931466	0.0000022295	0.0000031230	0.0017672064
710	9,098.07	-0.0018217912	0.0000033189	0.0000031857	0.0017848552
711	9,108.92	0.0011917428	0.0000014203	0.0000026208	0.0016188767
712	9,114.04	0.0005613546	0.0000003151	0.0000018830	0.0013722085
713	9,129.76	0.0017231753	0.0000029693	0.0000022306	0.0014935182
714	9,126.16	-0.0003937045	0.0000001550	0.0000015664	0.0012515617
715	9,110.94	-0.0016696826	0.0000027878	0.0000019573	0.0013990230
716	9,122.21	0.0012366233	0.0000015292	0.0000018203	0.0013491836
717	9,115.54	-0.0007316860	0.0000005354	0.0000014091	0.0011870628
718	9,125.51	0.0010926012	0.0000011938	0.0000013402	0.0011576740
719	9,127.65	0.0002348554	0.0000000552	0.0000009290	0.0009638425
720	9,139.01	0.0012442164	0.0000015481	0.0000011271	0.0010616490
721	9,172.65	0.0036736751	0.0000134959	0.0000050851	0.0022550192
722	9,172.76	0.0000117689	0.0000000001	0.0000034579	0.0018595484
723	9,150.51	-0.0024277215	0.0000058938	0.0000042374	0.0020584975
724	9,144.90	-0.0006137680	0.0000003767	0.0000030020	0.0017326245
725	9,140.01	-0.0005350330	0.0000002863	0.0000021330	0.0014604639
726	9,127.63	-0.0013552274	0.0000018366	0.0000020381	0.0014276325
727	9,148.50	0.0022835918	0.0000052148	0.0000030547	0.0017477599
728	9,142.93	-0.0006086468	0.0000003705	0.0000021957	0.0014817949
729	9,170.31	0.0029896669	0.0000089381	0.0000043533	0.0020864519
730	9,157.83	-0.0013616447	0.0000018541	0.0000035535	0.0018850825
731	9,165.61	0.0008489261	0.0000007207	0.0000026470	0.0016269667
732	9,142.60	-0.0025126715	0.0000063135	0.0000038203	0.0019545587
733	9,169.84	0.0029751425	0.0000088515	0.0000054303	0.0023302951
734	9,143.29	-0.0028998445	0.0000084091	0.0000063835	0.0025265586
735	9,098.41	-0.0049205585	0.0000242119	0.0000120886	0.0034768643
736	9,101.51	0.0003401497	0.0000001157	0.0000082573	0.0028735453
737	9,067.53	-0.0037404182	0.0000139907	0.0000100920	0.0031767864
738	9,105.09	0.0041337005	0.0000170875	0.0000123305	0.0035114861
739	9,070.42	-0.0038149479	0.0000145538	0.0000130420	0.0036113693
740	9,072.22	0.0001982444	0.0000000393	0.0000088811	0.0029801222
741	9,075.42	0.0003525772	0.0000001243	0.0000060789	0.0024655520
742	9,077.89	0.0002722028	0.0000000741	0.0000041574	0.0020389688
743	9,077.42	-0.0000519926	0.0000000027	0.0000028279	0.0016816340
744	9,127.48	0.0055004190	0.0000302546	0.0000116044	0.0034065293
745	9,097.86	-0.0032507574	0.0000105674	0.0000112726	0.0033574687
746	9,105.60	0.0008502382	0.0000007229	0.0000078967	0.0028101059
747	9,075.30	-0.0033330684	0.0000111093	0.0000089247	0.0029874308
748	9,045.19	-0.0033227341	0.0000110406	0.0000096018	0.0030986779
749	9,030.13	-0.0016672795	0.0000027798	0.0000074188	0.0027237419

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750	9,005.43	-0.0027381198	0.0000074973	0.0000074439	0.0027283511
751	8,954.53	-0.0056688264	0.0000321356	0.0000153452	0.0039173003
752	8,967.90	0.0014916939	0.0000022252	0.0000111468	0.0033386842
753	8,979.64	0.0013091249	0.0000017138	0.0000081283	0.0028510088
754	9,007.93	0.0031447206	0.0000098893	0.0000086918	0.0029481819
755	9,048.60	0.0045047081	0.0000202924	0.0000124040	0.0035219276
756	9,016.60	-0.0035419702	0.0000125456	0.0000124493	0.0035283536
757	9,066.43	0.0055106478	0.0000303672	0.0000181830	0.0042641560
758	9,064.54	-0.0002085436	0.0000000435	0.0000123784	0.0035182915
759	9,161.54	0.0106443801	0.0001133028	0.0000446742	0.0066838761
760	9,117.87	-0.0047777093	0.0000228265	0.0000376829	0.0061386430
761	9,103.45	-0.0015831364	0.0000025063	0.0000264264	0.0051406634
762	9,082.44	-0.0023103919	0.0000053379	0.0000196781	0.0044360002
763	9,091.60	0.0010081519	0.0000010164	0.0000137063	0.0037022081
764	9,080.45	-0.0012278074	0.0000015075	0.0000098027	0.0031309292
765	9,088.49	0.0008857957	0.0000007846	0.0000069169	0.0026300059
766	9,098.75	0.0011274802	0.0000012712	0.0000051103	0.0022605975
767	9,078.85	-0.0021893386	0.0000047932	0.0000050088	0.0022380415
768	9,094.41	0.0017124889	0.0000029326	0.0000043444	0.0020843325
769	9,123.92	0.0032396453	0.0000104953	0.0000063127	0.0025125121
770	9,111.48	-0.0013636202	0.0000018595	0.0000048877	0.0022108087
771	9,093.26	-0.0020017300	0.0000040069	0.0000046058	0.0021461208
772	9,095.60	0.0002568955	0.0000000660	0.0000031531	0.0017756931
773	9,072.45	-0.0025490426	0.0000064976	0.0000042233	0.0020550757
774	9,085.74	0.0014639613	0.0000021432	0.0000035577	0.0018861832
775	9,055.36	-0.0033486947	0.0000112138	0.0000060076	0.0024510466
776	9,046.33	-0.0009976897	0.0000009954	0.0000044037	0.0020985021
777	9,053.10	0.0007481958	0.0000005598	0.0000031737	0.0017814765
778	9,049.45	-0.0004036851	0.0000001630	0.0000022102	0.0014866861
779	9,054.14	0.0005183746	0.0000002687	0.0000015889	0.0012605348
780	9,069.86	0.0017343125	0.0000030078	0.0000020430	0.0014293332
781	9,067.95	-0.0002104973	0.0000000443	0.0000014034	0.0011846579
782	9,048.35	-0.0021638773	0.0000046824	0.0000024527	0.0015661030
783	9,049.20	0.0000938292	0.0000000088	0.0000016706	0.0012925319
784	9,057.78	0.0009477823	0.0000008983	0.0000014235	0.0011931000
785	9,068.26	0.0011565730	0.0000013377	0.0000013960	0.0011815342
786	9,067.70	-0.0000617653	0.0000000038	0.0000009505	0.0009749444
787	9,074.59	0.0007594846	0.0000005768	0.0000008309	0.0009115551
788	9,085.49	0.0012004874	0.0000014412	0.0000010262	0.0010130195
789	9,068.06	-0.0019197844	0.0000036856	0.0000018772	0.0013701113
790	9,070.53	0.0002717761	0.0000000739	0.0000013001	0.0011402348
791	9,176.40	0.0116039454	0.0001346515	0.0000439726	0.0066311829

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792	9,155.22	-0.0023107257	0.0000053395	0.0000316100	0.0056222757
793	9,177.07	0.0023841859	0.0000056843	0.0000233138	0.0048284344
794	9,214.73	0.0040949858	0.0000167689	0.0000212194	0.0046064542
795	9,207.81	-0.0007514115	0.0000005646	0.0000146099	0.0038222878
796	9,205.41	-0.0002603292	0.0000000678	0.0000099564	0.0031553776
797	9,212.66	0.0007873051	0.0000006198	0.0000069687	0.0026398313
798	9,178.54	-0.0037104601	0.0000137675	0.0000091443	0.0030239588
799	9,169.44	-0.0009919211	0.0000009839	0.0000065330	0.0025559719
800	9,190.63	0.0023087371	0.0000053303	0.0000061481	0.0024795403
801	9,219.95	0.0031845950	0.0000101416	0.0000074260	0.0027250777
802	9,211.40	-0.0009280124	0.0000008612	0.0000053253	0.0023076610
803	9,218.43	0.0007637349	0.0000005833	0.0000038079	0.0019513730
804	9,224.48	0.0006561133	0.0000004305	0.0000027271	0.0016513926
805	9,185.87	-0.0041947019	0.0000175955	0.0000074850	0.0027358717
806	9,138.62	-0.0051573657	0.0000265984	0.0000136013	0.0036879928
807	9,096.89	-0.0045770741	0.0000209496	0.0000159528	0.0039940896
808	9,131.08	0.0037520605	0.0000140780	0.0000153528	0.0039182672
809	9,112.60	-0.0020258949	0.0000041043	0.0000117533	0.0034283052
810	9,108.78	-0.0004199757	0.0000001764	0.0000080487	0.0028370177
811	9,132.81	0.0026352176	0.0000069444	0.0000076953	0.0027740393
812	9,130.11	-0.0002956816	0.0000000874	0.0000052608	0.0022936383
813	9,130.11	0.0000000000	0.0000000000	0.0000035773	0.0018913826
814	9,108.00	-0.0024249233	0.0000058803	0.0000043143	0.0020770807
815	9,122.05	0.0015419070	0.0000023775	0.0000036945	0.0019221062
816	9,105.91	-0.0017710940	0.0000031368	0.0000035160	0.0018751060
817	9,108.61	0.0002960805	0.0000000877	0.0000024189	0.0015552967
818	9,102.39	-0.0006825548	0.0000004659	0.0000017940	0.0013393903
819	9,104.91	0.0002767305	0.0000000766	0.0000012444	0.0011155280
820	9,105.02	0.0000119219	0.0000000001	0.0000008462	0.0009199127
821	9,107.40	0.0002613241	0.0000000683	0.0000005973	0.0007728490
822	9,098.02	-0.0010309739	0.0000010629	0.0000007463	0.0008638816
823	9,089.27	-0.0009616541	0.0000009248	0.0000008034	0.0008963299
824	9,072.10	-0.0018905385	0.0000035741	0.0000016900	0.0013000156
825	9,103.58	0.0034637034	0.0000119972	0.0000049883	0.0022334602
826	9,094.94	-0.0009494847	0.0000009015	0.0000036806	0.0019184789
827	9,090.36	-0.0005033655	0.0000002534	0.0000025839	0.0016074396
828	9,094.55	0.0004598451	0.0000002115	0.0000018247	0.0013508119
829	9,074.65	-0.0021898070	0.0000047953	0.0000027753	0.0016659149
830	9,080.00	0.0005891664	0.0000003471	0.0000019983	0.0014135992
831	9,083.21	0.0003537243	0.0000001251	0.0000013989	0.0011827330
832	9,083.45	0.0000265923	0.0000000007	0.0000009514	0.0009754226
833	9,079.67	-0.0004171749	0.0000001740	0.0000007027	0.0008382581

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834	9,047.91	-0.0035037831	0.0000122765	0.0000044063	0.0020991186
835	9,018.32	-0.0032760396	0.0000107324	0.0000064307	0.0025358751
836	8,884.44	-0.0149557612	0.0002236748	0.0000759488	0.0087148600
837	8,904.54	0.0022593224	0.0000051045	0.0000532786	0.0072992209
838	8,853.25	-0.0057764801	0.0000333677	0.0000469071	0.0068488785
839	8,768.47	-0.0096219284	0.0000925815	0.0000615229	0.0078436557
840	8,839.90	0.0081127652	0.0000658170	0.0000628970	0.0079307643
841	8,804.90	-0.0039675435	0.0000157414	0.0000478072	0.0069142768
842	8,823.11	0.0020660265	0.0000042685	0.0000338748	0.0058202080
843	8,805.09	-0.0020437367	0.0000041769	0.0000243715	0.0049367473
844	8,804.80	-0.0000336765	0.0000000011	0.0000165730	0.0040709906
845	8,807.41	0.0002965166	0.0000000879	0.0000112978	0.0033612128
846	8,765.49	-0.0047703550	0.0000227563	0.0000149645	0.0038683954
847	8,707.56	-0.0066313337	0.0000439746	0.0000242477	0.0049241970
848	8,689.46	-0.0020802820	0.0000043276	0.0000178733	0.0042276791
849	8,710.50	0.0024182331	0.0000058479	0.0000140251	0.0037450149
850	8,754.73	0.0050644119	0.0000256483	0.0000177445	0.0042124267
851	8,714.60	-0.0045939549	0.0000211044	0.0000188197	0.0043381679
852	8,770.49	0.0063931475	0.0000408723	0.0000258765	0.0050868992
853	8,815.34	0.0051004487	0.0000260146	0.0000259207	0.0050912390
854	8,829.45	0.0015995887	0.0000025587	0.0000184449	0.0042947485
855	8,827.00	-0.0002772361	0.0000000769	0.0000125671	0.0035450110
856	8,774.75	-0.0059372923	0.0000352514	0.0000198261	0.0044526499
857	8,805.36	0.0034825419	0.0000121281	0.0000173627	0.0041668613
858	8,858.46	0.0060124217	0.0000361492	0.0000233744	0.0048347086
859	8,889.68	0.0035172877	0.0000123713	0.0000198534	0.0044557173
860	9,064.58	0.0194835810	0.0003796099	0.0001349755	0.0116178957
861	9,030.23	-0.0037962556	0.0000144116	0.0000963950	0.0098180975
862	9,064.43	0.0037801893	0.0000142898	0.0000701214	0.0083738505
863	9,049.61	-0.0016368830	0.0000026794	0.0000485399	0.0069670608
864	9,079.83	0.0033339658	0.0000111153	0.0000365641	0.0060468224
865	8,972.47	-0.0118939379	0.0001414658	0.0000701326	0.0083745212
866	8,915.49	-0.0063709447	0.0000405889	0.0000606786	0.0077896490
867	8,905.29	-0.0011448189	0.0000013106	0.0000416809	0.0064560719
868	8,978.48	0.0081852768	0.0000669988	0.0000497826	0.0070556778
869	8,993.15	0.0016327964	0.0000026660	0.0000347053	0.0058911195
870	9,010.37	0.0019122552	0.0000036567	0.0000247697	0.0049769214
871	9,051.22	0.0045231887	0.0000204592	0.0000233904	0.0048363606
872	9,109.61	0.0064303310	0.0000413492	0.0000291372	0.0053978876
873	9,069.96	-0.0043614446	0.0000190222	0.0000259004	0.0050892429
874	9,034.99	-0.0038626053	0.0000149197	0.0000223866	0.0047314457
875	9,000.23	-0.0038547145	0.0000148588	0.0000199777	0.0044696417

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876	8,998.48	-0.0001946652	0.0000000379	0.0000135970	0.0036874056
877	9,019.58	0.0023423650	0.0000054867	0.0000110017	0.0033168763
878	9,017.60	-0.0002204300	0.0000000486	0.0000074967	0.0027380071
879	9,029.43	0.0013116132	0.0000017203	0.0000056482	0.0023766047
880	9,025.72	-0.0004107170	0.0000001687	0.0000038948	0.0019735223
881	9,005.36	-0.0022584103	0.0000051004	0.0000042806	0.0020689589
882	9,025.21	0.0022016201	0.0000048471	0.0000044619	0.0021123171
883	9,029.75	0.0005023165	0.0000002523	0.0000031148	0.0017648864
884	9,010.49	-0.0021343332	0.0000045554	0.0000035758	0.0018909789
885	9,025.20	0.0016307338	0.0000026593	0.0000032825	0.0018117722
886	9,054.70	0.0032636414	0.0000106514	0.0000056405	0.0023749834
887	9,062.32	0.0008410194	0.0000007073	0.0000040619	0.0020154185
888	9,105.52	0.0047549022	0.0000226091	0.0000099970	0.0031618049
889	9,067.58	-0.0041753884	0.0000174339	0.0000123768	0.0035180683
890	9,084.63	0.0018787227	0.0000035296	0.0000095457	0.0030896115
891	9,049.18	-0.0039094307	0.0000152836	0.0000113818	0.0033736987
892	9,072.97	0.0026251709	0.0000068915	0.0000099449	0.0031535599
893	9,098.00	0.0027551816	0.0000075910	0.0000091917	0.0030317796
894	9,215.57	0.0128403092	0.0001648735	0.0000590099	0.0076817889
895	9,227.60	0.0013040625	0.0000017006	0.0000406709	0.0063773744
896	9,185.72	-0.0045486984	0.0000206907	0.0000342772	0.0058546755
897	9,299.74	0.0123362099	0.0001521821	0.0000720068	0.0084856807
898	9,321.24	0.0023093019	0.0000053329	0.0000506711	0.0071183656
899	9,274.89	-0.0049850519	0.0000248507	0.0000424086	0.0065121890
900	9,304.68	0.0032070508	0.0000102852	0.0000321291	0.0056682543
901	9,320.49	0.0016975232	0.0000028816	0.0000227699	0.0047717817
902	9,284.06	-0.0039157883	0.0000153334	0.0000203902	0.0045155531
903	9,350.77	0.0071595482	0.0000512591	0.0000302683	0.0055016608
904	9,345.90	-0.0005207719	0.0000002712	0.0000206692	0.0045463402
905	9,366.88	0.0022415461	0.0000050245	0.0000156629	0.0039576397
906	9,397.85	0.0033013826	0.0000108991	0.0000141385	0.0037601198
907	9,484.92	0.0092220046	0.0000850454	0.0000368287	0.0060686653
908	9,475.03	-0.0010430339	0.0000010879	0.0000253916	0.0050390127
909	9,405.70	-0.0073437907	0.0000539313	0.0000345243	0.0058757404
910	9,435.53	0.0031664368	0.0000100263	0.0000266850	0.0051657491
911	9,429.53	-0.0006360554	0.0000004046	0.0000182752	0.0042749546
912	9,377.91	-0.0054893580	0.0000301331	0.0000220697	0.0046978439
913	9,410.55	0.0034737012	0.0000120666	0.0000188687	0.0043438156
914	9,382.58	-0.0029760095	0.0000088566	0.0000156649	0.0039578860
915	9,399.90	0.0018442970	0.0000034014	0.0000117406	0.0034264506
916	9,423.05	0.0024597951	0.0000060506	0.0000099198	0.0031495671
917	9,412.41	-0.0011296755	0.0000012762	0.0000071538	0.0026746624

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918	9,409.54	-0.0003049047	0.0000000930	0.0000048943	0.0022123169
919	9,387.23	-0.0023738799	0.0000056353	0.0000051315	0.0022652711
920	9,383.16	-0.0004336655	0.0000001881	0.0000035496	0.0018840301
921	9,405.12	0.0023375445	0.0000054641	0.0000041622	0.0020401529
922	9,415.77	0.0011309346	0.0000012790	0.0000032396	0.0017998878
923	9,418.36	0.0002758602	0.0000000761	0.0000022273	0.0014924065
924	9,429.26	0.0011565150	0.0000013375	0.0000019426	0.0013937565
925	9,419.72	-0.0010127613	0.0000010257	0.0000016492	0.0012841955
926	9,414.92	-0.0005095575	0.0000002596	0.0000012045	0.0010975041
927	9,379.61	-0.0037569242	0.0000141145	0.0000053357	0.0023099142
928	9,371.96	-0.0008160051	0.0000006659	0.0000038414	0.0019599375
929	9,391.86	0.0021206606	0.0000044972	0.0000040512	0.0020127657
930	9,258.56	-0.0142943200	0.0002043276	0.0000681397	0.0082546751
931	9,184.50	-0.0080312050	0.0000645003	0.0000669751	0.0081838286
932	9,187.76	0.0003542773	0.0000001255	0.0000455832	0.0067515330
933	9,130.54	-0.0062477423	0.0000390343	0.0000434875	0.0065945087
934	9,156.75	0.0028672076	0.0000082209	0.0000322022	0.0056746993
935	9,137.65	-0.0020877600	0.0000043587	0.0000232923	0.0048262099
936	9,140.38	0.0002987444	0.0000000892	0.0000158673	0.0039833811
937	9,143.54	0.0003447883	0.0000001189	0.0000108278	0.0032905656
938	9,073.36	-0.0077042516	0.0000593555	0.0000263567	0.0051338754
939	9,104.73	0.0034510033	0.0000119094	0.0000217336	0.0046619262
940	9,139.71	0.0038348159	0.0000147058	0.0000194847	0.0044141452
941	9,102.80	-0.0040473015	0.0000163806	0.0000184914	0.0043001615
942	9,040.97	-0.0068145729	0.0000464384	0.0000274344	0.0052377890
943	9,098.24	0.0063141595	0.0000398686	0.0000314134	0.0056047632
944	9,057.53	-0.0044849457	0.0000201147	0.0000277978	0.0052723627
945	9,085.15	0.0030449131	0.0000092715	0.0000218694	0.0046764718
946	9,022.71	-0.0068966937	0.0000475644	0.0000300918	0.0054855981
947	9,060.40	0.0041683439	0.0000173751	0.0000260224	0.0051012198
948	9,059.79	-0.0000666891	0.0000000044	0.0000176967	0.0042067428
949	9,138.01	0.0085964750	0.0000738994	0.0000356815	0.0059734034
950	9,094.47	-0.0047759352	0.0000228096	0.0000315625	0.0056180522
951	9,093.55	-0.0001007695	0.0000000102	0.0000214658	0.0046331152
952	9,119.57	0.0028565690	0.0000081600	0.0000172079	0.0041482418
953	9,128.44	0.0009718935	0.0000009446	0.0000120036	0.0034646275
954	9,155.34	0.0029427668	0.0000086599	0.0000109336	0.0033066052
955	9,179.69	0.0026565763	0.0000070574	0.0000096932	0.0031133971
956	9,134.77	-0.0049052341	0.0000240613	0.0000142910	0.0037803475
957	9,093.27	-0.0045538367	0.0000207374	0.0000163539	0.0040439925
958	9,112.93	0.0021596793	0.0000046642	0.0000126132	0.0035515045
959	9,098.31	-0.0016058585	0.0000025788	0.0000094022	0.0030662967

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960	9,083.29	-0.0016520817	0.0000027294	0.0000072669	0.0026957149
961	9,132.85	0.0054418736	0.0000296140	0.0000144180	0.0037970981
962	9,144.94	0.0013222148	0.0000017483	0.0000103636	0.0032192622
963	9,168.47	0.0025704198	0.0000066071	0.0000091615	0.0030268036
964	9,107.30	-0.0066950457	0.0000448236	0.0000205734	0.0045357922
965	9,151.88	0.0048838091	0.0000238516	0.0000216224	0.0046499924
966	9,125.47	-0.0028900388	0.0000083523	0.0000173760	0.0041684524
967	9,177.50	0.0056851789	0.0000323213	0.0000221585	0.0047072794
968	9,187.94	0.0011373519	0.0000012936	0.0000154817	0.0039346802
969	9,172.39	-0.0016940865	0.0000028699	0.0000114459	0.0033831847
970	9,240.08	0.0073530439	0.0000540673	0.0000250848	0.0050084688
971	9,348.46	0.0116610621	0.0001359804	0.0000605714	0.0077827601
972	9,295.79	-0.0056504314	0.0000319274	0.0000514053	0.0071697477
973	9,373.02	0.0082736383	0.0000684531	0.0000568606	0.0075405955
974	9,377.47	0.0004743927	0.0000002250	0.0000387372	0.0062239224
975	9,376.21	-0.0001336423	0.0000000179	0.0000263470	0.0051329347
976	9,378.43	0.0002367623	0.0000000561	0.0000179339	0.0042348448
977	9,370.97	-0.0007962386	0.0000006340	0.0000123979	0.0035210705
978	9,387.66	0.0017797276	0.0000031674	0.0000094442	0.0030731377
979	9,406.26	0.0019788265	0.0000039158	0.0000076751	0.0027703936
980	9,381.65	-0.0026190987	0.0000068597	0.0000074142	0.0027228940
981	9,372.81	-0.0009426038	0.0000008885	0.0000053259	0.0023078006
982	9,348.64	-0.0025823707	0.0000066686	0.0000057556	0.0023990844
983	9,307.94	-0.0043633892	0.0000190392	0.0000100063	0.0031632807
984	9,269.47	-0.0041415261	0.0000171522	0.0000122930	0.0035061419
985	9,247.85	-0.0023346656	0.0000054507	0.0000101035	0.0031785961
986	9,255.76	0.0008541230	0.0000007295	0.0000071038	0.0026652974
987	9,249.20	-0.0007083901	0.0000005018	0.0000049912	0.0022340932
988	9,284.27	0.0037840894	0.0000143193	0.0000079762	0.0028242138
989	9,317.35	0.0035571362	0.0000126532	0.0000094728	0.0030777970
990	9,311.20	-0.0006599909	0.0000004356	0.0000065809	0.0025653295
991	9,329.30	0.0019418800	0.0000037709	0.0000056817	0.0023836338
992	9,373.40	0.0047160568	0.0000222412	0.0000109807	0.0033137206
993	9,418.20	0.0047674832	0.0000227289	0.0000147402	0.0038392906
994	9,394.99	-0.0024669614	0.0000060859	0.0000119708	0.0034598831
995	9,429.94	0.0037125283	0.0000137829	0.0000125507	0.0035426904
996	9,430.46	0.0000555084	0.0000000031	0.0000085354	0.0029215461
997	9,409.67	-0.0022074404	0.0000048728	0.0000073634	0.0027135562
998	9,409.55	-0.0000125982	0.0000000002	0.0000050072	0.0022376671
999	9,430.96	0.0022729472	0.0000051663	0.0000050581	0.0022490170
1000	9,394.28	-0.0038965122	0.0000151828	0.0000082980	0.0028806234

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