

## FIRING AN EXPERT

Angelina J. Wagner, an INSEAD alumnus, had now been the CEO of Zen Securities for over a year. Zen was a brokerage and research firm based in Tokyo that specialized mainly in the Japanese market, and was in the process of spreading its services also in some of the other Asian markets.

Zen had been doing remarkably well especially in predicting the major currency movements and was now considered a foremost authority in that arena. However, Angelina felt that Zen had overcommitted resources in at least some aspects of such forecasting. She had been primarily concerned about three senior analysts devoted only and entirely to forecasting quarterly movements of US\$ versus Euro - it was not clear to her that all three were needed, and more so since they each had started asking for very high retaining fees (salary and bonuses). Angelina felt that firing one of them would solve the problem: besides reducing costs, it will make the remaining two more modest in their demand for compensation.

Angelina had mentioned her concern to her general assistant, Vladimir Ivanovic, whom she had recently hired as a fresh Stanford MBA graduate, during a free moment at a dinner with a client the previous night. As she was thinking of reminding Vladimir to take up this issue on a high-priority basis, he announced himself to her office.

Vladimir had brought with him his analysis of the situation – after the dinner last night and despite a later visit to a bar until late, he had already managed to work on it. Angelina couldn't help but remember his training at West Point Academy prior to the MBA – the discipline was not to be missed and a bit scary.

Vladimir: “Angelina, I have closely looked at their performances since the last nine years they have been with Zen. Here are their forecasts and the actual outcomes (Exhibit 1), the same on a graph (Exhibit 2), and a table with the average squared errors of their forecasts (Exhibit 3). Brad clearly comes out the worst. In fact, his average squared error is far higher than that of Shahrukh and Jackie. Just give me the word and I will dump him out of here!”

Angelina found it somewhat unsettling, even though she was impressed with Vladimir's swiftness in doing all the analysis but at the same time couldn't pinpoint the source of her discomfort. Vladimir came with the reputation of being a statistical wizard. Maybe, it was her non-quantitative orientation, she thought – at INSEAD, she had always preferred the OB (Organizational Behavior) language rather than all the Greek-letter heavy classes in the statistical tradition. She wondered whether there was any relevance here of the value of diversity, akin to all the slogans about the value of diversity she had heard at INSEAD. She knew that Shahrukh and Jackie were both economics graduates from the University of Chicago, both were constantly in the process of slicing and dicing data in the most complex manner with seemingly sophisticated techniques, always seemed highly confident and knowledgeable, and could easily be considered as clones of each other. On the other hand, Brad, holding Master in History from Oxford, was almost Bohemian also in his research process. At meetings, he would blurt out the strangest pieces of information, used gut feeling with simple techniques, and seemed in his own independent world.

Angelina told Vladimir to come back after some time, so that she could go through the information carefully. Alone, Angelina wanted to check her intuition on diversity and thought of applying a concept she vaguely remembered from her statistics class, pair-wise correlations between the forecasts of the three of them (Exhibit 4). However, having done that, she didn't know how to think about it further.

### **Assignment:**

1. Suppose you fired Jackie and you now only had Shahrukh's and Brad's forecasts for next quarter. Shahrukh predicts 1.45 and Brad says 1.19. What would you predict?
2. In practice (if you were in this company) would you have considered taking the average of the forecasts of these 2 experts to answer question 1?
3. Which expert do you suggest to fire? Brad, Shahrukh or Jackie?
4. Did you use linear regression for your analysis to answer question 1? Question 3?
5. Would you have used linear regression in your job to answer question 1? What about question 3?

## Exhibit 1

### End-of-Quarter Forecasts by Shahrukh, Jackie, and Brad, and the Actual Exchange Rates

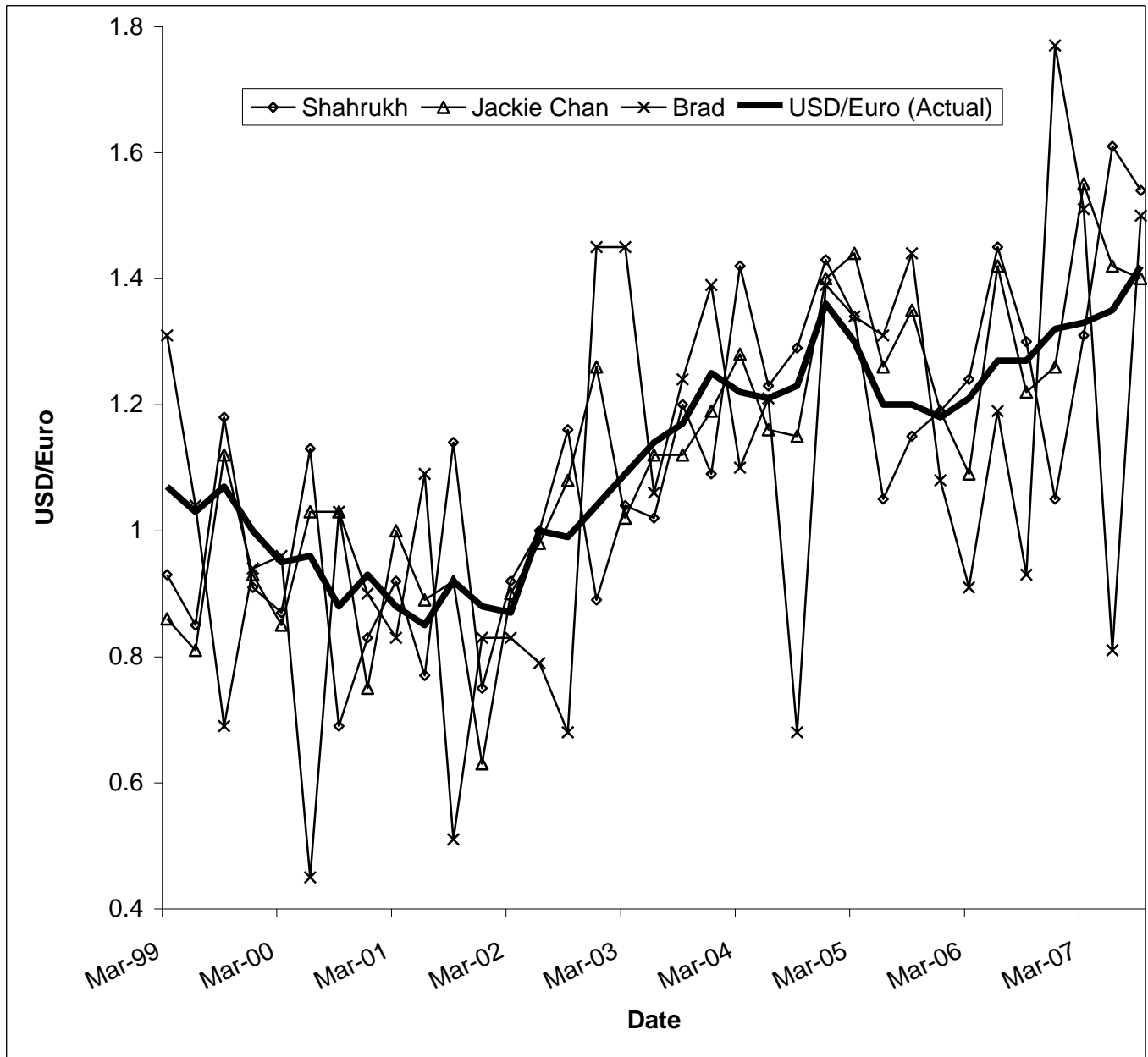
Date	Shahrukh	Jackie Chan	Brad	US\$/€(Actual)
3/31/1999	0.93	0.86	1.31	1.07
6/30/1999	0.85	0.81	1.04	1.03
9/30/1999	1.18	1.12	0.69	1.07
12/31/1999	0.91	0.93	0.94	1.00
3/31/2000	0.87	0.85	0.96	0.95
6/30/2000	1.13	1.03	0.45	0.96
9/29/2000	0.69	1.03	1.03	0.88
12/29/2000	0.83	0.75	0.90	0.93
3/30/2001	0.92	1.00	0.83	0.88
6/29/2001	0.77	0.89	1.09	0.85
9/28/2001	1.14	0.92	0.51	0.92
12/31/2001	0.75	0.63	0.83	0.88
3/29/2002	0.92	0.90	0.83	0.87
6/28/2002	1.00	0.98	0.79	1.00
9/30/2002	1.16	1.08	0.68	0.99
12/31/2002	0.89	1.26	1.45	1.04
3/31/2003	1.04	1.02	1.45	1.09
6/30/2003	1.02	1.12	1.06	1.14
9/30/2003	1.20	1.12	1.24	1.17
12/31/2003	1.09	1.19	1.39	1.25
3/31/2004	1.42	1.28	1.10	1.22
6/30/2004	1.23	1.16	1.21	1.21
9/30/2004	1.29	1.15	0.68	1.23
12/31/2004	1.43	1.40	1.39	1.36
3/31/2005	1.34	1.44	1.34	1.30
6/30/2005	1.05	1.26	1.31	1.20
9/30/2005	1.15	1.35	1.44	1.20
12/30/2005	1.19	1.19	1.08	1.18
3/31/2006	1.24	1.09	0.91	1.21
6/30/2006	1.45	1.42	1.19	1.27
9/29/2006	1.30	1.22	0.93	1.27
12/29/2006	1.05	1.26	1.77	1.32
3/30/2007	1.31	1.55	1.51	1.33
6/29/2007	1.61	1.42	0.81	1.35
9/28/2007	1.54	1.40	1.50	1.42

This is the first draft of a case by Professors Anil Gaba and Ilia Tsetlin. Please do not quote without permission. The issue with three experts also appeared in Harvard Business School case “Breakfast Foods Corporation” by Professor David E. Bell.

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## Exhibit 2

**Graph of End-of-Quarter Forecasts by Shahrukh, Jackie, and Brad,  
and the Actual Exchange Rates**



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### Exhibit 3

#### Squared Errors of Forecasts

**Squared Error = (Forecast – Actual Exchange Rate) x (Forecast – Actual Exchange Rate)**

Date	Shahrukh	Jackie Chan	Brad
3/31/99	0.0196	0.0441	0.0576
6/30/99	0.0324	0.0484	0.0001
9/30/99	0.0121	0.0025	0.1444
12/31/99	0.0081	0.0049	0.0036
3/31/00	0.0064	0.0100	0.0001
6/30/00	0.0289	0.0049	0.2601
9/29/00	0.0361	0.0225	0.0225
12/29/00	0.0100	0.0324	0.0009
3/30/01	0.0016	0.0144	0.0025
6/29/01	0.0064	0.0016	0.0576
9/28/01	0.0484	0.0000	0.1681
12/31/01	0.0169	0.0625	0.0025
3/29/02	0.0025	0.0009	0.0016
6/28/02	0.0000	0.0004	0.0441
9/30/02	0.0289	0.0081	0.0961
12/31/02	0.0225	0.0484	0.1681
3/31/03	0.0025	0.0049	0.1296
6/30/03	0.0144	0.0004	0.0064
9/30/03	0.0009	0.0025	0.0049
12/31/03	0.0256	0.0036	0.0196
3/31/04	0.0400	0.0036	0.0144
6/30/04	0.0004	0.0025	0.0000
9/30/04	0.0036	0.0064	0.3025
12/31/04	0.0049	0.0016	0.0009
3/31/05	0.0016	0.0196	0.0016
6/30/05	0.0225	0.0036	0.0121
9/30/05	0.0025	0.0225	0.0576
12/30/05	0.0001	0.0001	0.0100
3/31/06	0.0009	0.0144	0.0900
6/30/06	0.0324	0.0225	0.0064
9/29/06	0.0009	0.0025	0.1156
12/29/06	0.0729	0.0036	0.2025
3/30/07	0.0004	0.0484	0.0324
6/29/07	0.0676	0.0049	0.2916
9/28/07	0.0144	0.0004	0.0064
<b>Average</b>	<b>0.0168</b>	<b>0.0135</b>	<b>0.0667</b>

## **Exhibit 4**

### **Pair-Wise Correlations Between Forecasts and Actual Exchange Rates**

	<b>Shahrukh</b>	<b>Jackie Chan</b>	<b>Brad</b>	<b>USD/Euro (Actual)</b>
<b>Shahrukh</b>	1.0000	0.7919	0.1315	0.8296
<b>Jackie Chan</b>	0.7919	1.0000	0.5034	0.8476
<b>Brad</b>	0.1315	0.5034	1.0000	0.5611
<b>USD/Euro (Actual)</b>	0.8296	0.8476	0.5611	1.0000