1) **Pinot Noir** (aus: Eiteman/ Stonehill/ Moffett 9th Ed. p. 88)

Pinot Noir Wine is produced in the states of California (USA) and New South Wales (Australia). Equivalent bottles of Pinot Noir sell in the US for USD 22 and in Australia for AD 34.

a) According to the theory of purchasing power parity, what should be the A$/US$ spot rate of exchange?

b) Suppose the price of Pinot Noir is expected to rise to USD 27 over the next year, while the price of a comparable bottle of Australian wine is expected to rise to AD 44. What should be the one-year forward A$/US$ exchange rate?

c) Given your answers to a) and b) above, and given that the current interest rate in the US is 5 % for notes of a one-year maturity, what would you expect current Australian interest rates to be?

2) **London and New York** (aus: Eiteman/Stonehill/Moffett 9th Ed. 89)

Money and foreign exchange markets in London and New York are very efficient. You have the following information:

<table>
<thead>
<tr>
<th></th>
<th>London</th>
<th>New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spot exchange rate</td>
<td>1.6000$/£</td>
<td>0.6250£/$</td>
</tr>
<tr>
<td>One-year treasury bill rate</td>
<td>5.00%</td>
<td>6.00%</td>
</tr>
<tr>
<td>Expected inflation rate</td>
<td>2.00%</td>
<td>unknown</td>
</tr>
</tbody>
</table>

Assuming parity conditions hold:

a) Estimate inflation in the United States next year.

b) Estimate today’s one-year forward exchange rate US dollars in British pounds ($/£).

3) **Fallstudie: GTM**


- **Kassakurs**: 1,1242 USD/EUR
- **drei-Monats-Terminkurs**: 1,1329 USD/EUR (87 Swappunkte)
- **Kapitalkosten von GTM**: 6 % p.a.
- **Kreditzinsen für 3 Monate in D**: 2 % p.a.
- **Anlagezinsen für 3 Monate in D**: 0 % p.a.
- **Kreditzinsen für 3 Monate in USA**: 4 % p.a.
- **Anlagezinsen für 3 Monate in USA**: 2 % p.a.
- **near at the money call Option (BP 1,12 USD/EUR)** Prämie für 3 Monate: 1,12
- **out of the money call Option (BP 1,16 UDS/EUR)** Prämie für 3 Monate: 0,33
- **in the money call Option (BP 1,10 UDS/EUR)** Prämie für 3 Monate: 3,67
- unternehmensintern erwarteter Devisenkurs in drei Monaten: 1,11 USD/EUR.

Die Gewinnmarge ist wie im internationalen Handel so oft sehr knapp kalkuliert. Eine Befestigung des USD (z.B. 1,06 USD/EUR) hätte den Vorteil, das Ergebnis in EUR
zu erhöhen. Um wenigstens die Deckungsbeiträge nicht zu gefährden, ist ein operatives Ergebnis von 978 000 EUR notwendig, was einem effektiven Kurs von ca. 1,15 USD/EUR entspricht.

Analysieren Sie die ex ante denkbaren Ergebnisse aus dem Exportgeschäft für jeden der folgenden Möglichkeiten, mit dem Transaction Exposure zu verfahren:

a) Offenlassen der WRP  
b) Kurssicherung durch Abschluss eines Devisentermingeschäfts  
c) Devisenkursversichernde Kreditaufnahme  
d) Kurssicherung durch Einsatz von Devisenoptionen

4) Fallstudie LUFTHANSA  
(Aus: Eiteman/ Stonehill/ Moffett: Multinational Business Finance, 9th Ed., S. 188 ff.)

It was February 14, 1986, and Herr Heinz Ruhnau, chairman of Lufthansa (Germany) was summoned to meet with Lufthansa's board. The board's task was to determine if Herr Ruhnau's term of office should be terminated. Herr Ruhnau had already been summoned by Germany's transportation minister to explain his supposed speculative management of Lufthansa's exposure in the purchase of Boeing aircraft. In January 1985 Lufthansa (Germany), under the chairmanship of Herr Heinz Ruhnau, purchased twenty 737 jets from Boeing (D.S.). The agreed upon price was $500,000,000, payable in U.S. dollars on delivery of the aircraft in one year (January 1986). The U.S. dollar had been rising steadily and rapidly since 1980, and was approximately DM3.2/$ in January 1985. If the dollar were to continue to rise, the cost of the jet aircraft to Lufthansa would rise substantially by the time payment was due. Herr Ruhnau had his own view or expectations regarding the direction of the exchange rate. Like many others at the time, he believed the dollar had risen about as far as it was going to go, and would probably fall by the time January 1986 rolled around. But then again, it really wasn't his money to gamble with. He compromised. He covered half the exposure ($250,000,000) at a rate of DM3.2/$, and left the remaining half ($250,000,000) uncovered.

Evaluation of the Hedging Alternatives

Lufthansa and Herr Ruhnau had the same basic hedging alternatives available to all firms:

1. Remain uncovered;  
2. Cover the entire exposure with forward contracts;  
3. Cover some proportion of the exposure, leaving the balance uncovered;  
4. Cover the exposure with foreign currency options;  
5. Obtain U.S. dollars now and hold them until payment is due.

Although the final expense of each alternative could not be known beforehand, each alternative's outcome could be simulated over a range of potential ending exchange rates. Exhibit 1 illustrates the final net cost of the first four alternatives over a wide range of potential end-of-period (January 1986) spot exchange rates.

Of course one of the common methods of covering a foreign currency exposure for firms, which involves no use of financial contracts like forwards or options, is the matching of currency cash flows. Lufthansa did have inflows of U.S. dollars on a regular basis as a result of airline ticket purchases in the United States. Although Herr Ruhnau thought briefly about matching these U.S. dollar-denominated cash inflows against the dollar outflows to Boeing, the magnitude of the mismatch was obvious. Lufthansa simply did not receive anything close to $500 million a year in dollar-earnings, or even over several years for that matter.
1: Remain Uncovered
Remaining uncovered is the maximum risk approach. It therefore represents the greatest potential benefits (if the dollar weakens versus the Deutschemark), and the greatest potential cost (if the dollar continues to strengthen versus the Deutschemark). If the exchange rate were to drop to DM2.2/$ by January 1986, the purchase of the Boeing 737s would be only DM1.1 billion. Of course if the dollar continued to appreciate, rising to perhaps DM4.0/$ by 1986, the total cost would be DM2.0 billion. The uncovered position’s risk is therefore shown as that value line which has the steepest slope (covers the widest vertical distance) in Exhibit 1. This is obviously a sizable level of risk for any firm to carry. Many firms believe the decision to leave a large exposure uncovered for a long period of time to be nothing other than currency speculation.

2: Full Forward Cover
If Lufthansa were very risk averse and wished to eliminate fully its currency exposure, it could buy forward contracts for the purchase of U.S. dollars for the entire amount. This would have locked in an exchange rate of DM3.2/$, with a known final cost of DM1.6 billion. This alternative is represented by the horizontal value line in Exhibit 1; the total cost of the Boeing 737s no longer has any risk or sensitivity to the ending spot exchange rate. Most firms believe they should accept or tolerate risk in their line of business, not in the process of payment. The 100% forward cover alternative is often used by firms as their benchmark, their comparison measure for actual currency costs when all is said and done.

3: Partial Forward Cover
This alternative would cover only part of the total exposure leaving the remaining exposure uncovered. Herr Ruhnau’s expectations were for the dollar to fall, so he expected Lufthansa would benefit from leaving more of the position uncovered (as in alternative 1). This strategy is somewhat arbitrary, however, in that there are few objective methods available for determining what the proper balance (20/80, 40/60, 50/50, etc.) between covered/uncovered should be. Exhibit 1 illustrates the total ending cost of this alternative for a partial cover of 50/50: $250 million purchased with
forward contracts of DM3.2/$, and the $250 million remaining purchased at the end-
of-period spot rate. Note that this value line's slope is simply half that of the 100% uncovered position. Any other partial cover strategy would similarly fall between the unhedged and 100% cover lines.

Two principal points can be made regarding partial forward cover strategies such as this. First, Herr Ruhnau's total potential exposure is still unlimited. The possibility that the dollar would appreciate to astronomical levels still exists, and $250 million could translate into an infinite amount of Deutschemarks. The second point is that the first point is highly unlikely to occur. Therefore, for the immediate ranges of potential exchange rates on either side of the current spot rate of DM3.2/$, Herr Ruhnau has reduced the risk (vertical distance in Exhibit 1) of the final Deutschemark outlay over a range of ending values and the benchmark value of DM3.2/$.

4: Foreign Currency Options
The foreign currency option is unique among the hedging alternatives due to its kinked-shape value line. If Herr Ruhnau had purchased a put option on marks at DM3.2/$, he could have obtained what many people believe is the best of both worlds. If the dollar had continued to strengthen above DM3.2/$, the total cost of obtaining $500 million could be locked in at DM1.6 billion plus the cost of the option premium, as illustrated by the flat portion of the option alternative to the right of DM3.2/$. If, however, the dollar fell as Herr Ruhnau had expected, Lufthansa would be free to let the option expire and purchase the dollars at lower cost on the spot market. This alternative is shown by the falling value line to the left of DM3.2/$. Note that the put option line falls at the same rate (same slope) as the uncovered position, but is higher by the cost of purchasing the option.

In this instance Herr Ruhnau would have had to buy put options for DM1.6 billion given an exercise price of DM3.2/$. In January 1985 when Herr Heinz Ruhnau was thinking over these alternatives, the option premium on Deutschemark put options was about 6%, equal to DM96,000,000 or $30,000,000! The total cost of the purchase in the event the put option was exercised would be DM1,696,000,000 (exercise plus premium).

It is important to understand what Herr Ruhnau would be hoping to happen if he had decided to purchase the put options. He would be expecting the dollar to weaken (ending up to the left of DM3.2/$ in Exhibit 1), therefore he would expect the option to expire without value. In the eyes of many corporate treasurers, DM96,000,000 is a lot of money for the purchase of an instrument that the hedger expects or hopes not to use!

5: Buy Dollars Now
The fifth alternative is a money market hedge for an account payable: Obtain the $500 million now and hold those funds in an interest-bearing account or asset until payment was due. Although this would eliminate the currency exposure, it required that Lufthansa have all the capital in hand now. The purchase of the Boeing jets had been made in conjunction with the ongoing financing plans of Lufthansa, and these did not call for the capital to be available until January 1986. An added concern (and what ultimately eliminated this alternative from consideration) was that Lufthansa had several relatively strict covenants in place that limited the types, amounts, and currencies of denomination of the items it could carry on its balance sheet.
Herr Ruhnau's Decision
Although Herr Ruhnau truly expected the dollar to weaken over the coming year, he believed remaining completely uncovered was too risky for Lufthansa. Few would argue this, particularly given the strong upward trend of the DM/$ exchange rate as seen in Exhibit 2. The dollar had shown a consistent three-year trend of appreciation versus the Deutschemark, and that trend seemed to be accelerating over the most recent year. Because he personally felt so strongly the dollar would weaken, Herr Ruhnau chose to go with partial cover. He chose to cover 50% of the exposure ($250 million) with forward contracts (the one-year forward rate was DM3.2/$) and to leave the remaining 50% ($250 million) uncovered. Because foreign currency options were as yet a relatively new tool for exposure management by many firms, and because of the sheer magnitude of the up-front premium required, the foreign currency option was not chosen. Time would tell if this was a wise decision.

Exhibit 2
What Herr Ruhnau Could See: The Rise

Exhibit 5
What Herr Ruhnau Couldn’t See: The Fall
How It Came Out
Herr Ruhnau was both right and wrong. He was definitely right in his expectations. The dollar appreciated for one more month, and then weakened over the coming year. In fact, it did not simply weaken, it plummeted. By January 1986 when payment was due to Boeing, the spot rate had fallen to DM2.3/$ from the previous year's DM3.2/$ as shown in Exhibit 3. This was a spot exchange rate movement in Lufthansa's favour. The bad news was that the total Deutschmark cost with the partial forward cover was DM1.375 billion, a full DM225,000,000 more than if no hedging had been implemented at all! This was also DM129,000,000 more than what the foreign currency option hedge would have cost in total. The total cost of obtaining the needed $500 million for each alternative at the actual ending spot rate of DM2.3/$ would have been. Herr Ruhnau's political rivals, both inside and outside of Lufthansa, were not so happy. Ruhnau was accused of recklessly speculating with Lufthansa's money, but the speculation was seen as the forward contract, not the amount of the dollar exposure left uncovered for the full year. It is obvious that the term speculation holds an entirely new meaning when perfect hindsight is used to evaluate performance.

Alternative | Relevant | Total DM Cost |
--- | --- | --- |
1: Uncovered | DM 2.3/$ | 1,150,000,000 |
2: Full Forward Cover (100%) | DM 3.2/$ | 1,600,000,000 |
3: Partial Forward Cover | (DM 3.2/$+ DM 2.3$/2) | 1,375,000,000 |
4: DM Put Options | DM 3.2/$ strike | 1,246,000,000 |

Case Questions
Herr Ruhnau was accused of making the following four mistakes:

1. Purchasing the Boeing aircraft at the wrong time. The U.S. dollar was at an all-time high at the time of the purchase in January 1985.
2. Choosing to hedge half the exposure when he expected the dollar to fall. If he had gone through with his instincts or expectations, he would have left the whole amount unhedged (which some critics have termed "whole hog").
3. Choosing to use forward contracts as his hedging tool instead of options. The purchase of put options would have allowed Herr Ruhnau to protect himself against adverse exchange rate movements while preserving the flexibility of exchanging DM for U.S dollars spot if the market moved in his favour.
4. Purchasing Boeing aircraft at all. Germany, as well as the other major European Economic Community countries, has a vested interest in the joint venture Airbus. Airbus's chief rival was Boeing in the manufacture of large long-distance civil aircraft.

Given these criticisms, should the board of Lufthansa retain Herr Heinz Ruhnau as chairman? How should Ruhnau justify his actions and so justify his further employment?
5) Fallstudie: Maschinenfabrik AG, Stuttgart


Die Gesellschaft

Die Gesellschaft MAG wurde im Jahre 1876 gegründet. Sie stellt ein vollständiges Programm von Werkzeugmaschinen mit mechanischen oder numerischen Steuerungen her. Die Abteilung für Problemlösungen von MAG ist darauf spezialisiert, die Kernfunktion der Maschinen jeweils so zu gestalten, dass die speziellen Produktionsprobleme jedes Kunden gelöst werden können. In der Hauptsache liefert MAG Werkzeugmaschinen für die Automobilindustrie, und MAG-Maschinen sind bei allen bedeutenden Fahrzeugherstellern der Welt eingesetzt.


samt 350 Millionen Dollar ausmachenden Auftragsvolumen für Werkzeugmaschinen für eine neue Lastkraftwagenfabrik in Russland zu erhalten.

**Konkurrenzsituation**


**Währungsrisikopolitik**


In allen Fällen, in denen es deutlich wurde, dass es zu einer zeitlichen Verschiebung zwischen dem vertraglich vorgesehenen Zahlungstermin und dem tatsächlichen Zahlungstermin kommen würde, wurden die ursprünglichen Devisenterminverträge ohne Rücksicht auf damit verbundene Kosten ausnahmslos "weiter geswappt". Der Vorstandsvorsitzende, Herr Klaus Martin war der Auffassung, dass dieses "weiter swappen" jeweils umso notwendiger ist, je höher die Kosten der Prolongation eines Devisenterminvertrages durch einen solchen Swap sind. Herr Martin ging auch davon aus, dass kurzfristige internationale Zinssatzdifferenzen durch spekulative internationalen Geld- und Kapitalbewegungen stark beeinflusst werden. Deshalb war er der Ansicht, dass die eine Währung betreffende Spekulation - die üblicherweise einer Veränderung der Kassakurse vorausgeht - sich am Devisenterminmarkt niederschlägt. Bis zum Jahreswechsel 2018-2019 hatte sich der höchste Prolongationsaufwand für ein Devisentermingeschäft, den
MAG hinnehmen musste, auf 6,9% des Gesamtwertes des betreffenden Exportgeschäfts belaufen.

**Das Russland-Geschäft**


Um gute Aussichten zu haben, den Auftrag ganz oder teilweise zu erhalten, sahen sich Herr Martin und Frau Dr. Platzek gezwungen, ihre normale Preispolitik zu modifizieren. Der für den Abschluss zugrunde zu legende Devisenkurs würde der Kassamittelkurs am 1. April 2019 sein. Am Vormittag des 1. April stand der Kassakurs bei 1,1242 USD/EUR und am Devisenterminmarkt galten folgende Swapsätze:

<table>
<thead>
<tr>
<th>1 Monat</th>
<th>29</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Monate</td>
<td>87</td>
</tr>
<tr>
<td>6 Monate</td>
<td>173</td>
</tr>
<tr>
<td>12 Monate</td>
<td>341</td>
</tr>
</tbody>
</table>

Unter der Voraussetzung, dass MAG die Maschinen zu den vorgesehenen Terminen liefert, würden folgende Zahlungstermine gelten:

<table>
<thead>
<tr>
<th>1. Mai 2020</th>
<th>20 Millionen US-$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. September 2020</td>
<td>32 Millionen US-$</td>
</tr>
<tr>
<td>1. November 2020</td>
<td>28 Millionen US-$</td>
</tr>
<tr>
<td>1. Januar 2021</td>
<td>16 Millionen US-$</td>
</tr>
<tr>
<td>1. April 2021</td>
<td>24 Millionen US-$</td>
</tr>
</tbody>
</table>

**Alternativen**


6) Lindt & Sprüngli in Brasilien

Der schweizerische Schokoladenhersteller Lindt & Sprüngli plant in der nächsten Zukunft, über ein Joint Venture den brasilianischen Markt zu erobern. Im Handelsblatt vom 12. März 2014 findet sich auszugsweise nachstehende Ankündigung:


Welche Motive treiben Lindt & Sprüngli in Brasilien? Wie sollen die gesteckten Ziele erreicht werden? Welche Eintrittserleichterungen existieren? Mit welchen zusätzlichen Risiken muss gerechnet werden?

7) Toyota's European Operating Exposure (Q: E/S/M 12.th Glob Ed. pp 338ff)

It was January 2002, and Toyota Motor Europe Manufacturing (TMEM) had a problem. More specifically, Mr. Toyoda Shuhei, the new President of TMEM, had a problem. He was on his way to Toyota Motor Company's (Japan) corporate offices outside Tokyo to explain the continuing losses of European manufacturing and sales operations. The CEO of Toyota Motor Company, Mr. Hiroshi Okuda, was expecting a proposal from Mr. Shuhei to reduce and eventually eliminate these losses. The situation was intense, given that TMEM was the only major Toyota subsidiary to be losing money.

Toyota and Auto Manufacturing

Toyota Motor Company was the number one automobile manufacturer in Japan, the third largest manufacturer in the world by unit sales (5.5 million units or one auto every six seconds), but number eight in sales in continental Europe. The global automobile manufacturing industry, like many industries, had been experiencing continued consolidation in recent years, as margins were squeezed, economies of scale and scope pursued, and global sales slowed.

Toyota was no different. It had continued to rationalize its manufacturing along regional lines and to increase the amount of local manufacturing in North America. In 2001, over 60% of Toyota's North American sales were locally manufactured. But Toyota's European sales were nowhere close to this yet. Most of Toyota's automobile and truck manufacturing for Europe was still done in Japan. In 2001, only 24% of the autos sold in Europe were manufactured in Europe (including the U. K.), the remainder being imported from Japan (see Exhibit A).

Toyota Motor Europe sold 634,000 automobiles in 2000. Europe was the second-largest foreign market for Toyota, behind only North America. TMEM expected significant growth in European sales and was planning to expand European manufacturing and sales to 800,000 units by 2005. But for fiscal 2001, the unit reported operating losses of ¥ 9.897 billion ($82.5 million at ¥ 120/$). TMEM had three assembly plants in the United Kingdom, one plant in Turkey, and one in Portugal. In November 2000, Toyota Motor Europe announced publicly that it would not generate profits for the next two years, due to the weakness of the euro.

Toyota had recently introduced a new model to the European market, the Yaris, which was proving very successful. The Yaris, a super-small vehicle with a 1,000cc engine, had sold more than 180,000 units in 2000. Although the Yaris had been spe-
specifically designed for the European market, the decision had been made early on to manufacture it in Japan.

Currency Exposure
One source of the continuing operating losses suffered by TMEM was the falling value of the euro. Throughout 1999 and the first half of 2000, the yen strengthened against the euro (Exhibit B). Although the euro regained some ground in late 2000, it remained relatively weak.
As demonstrated in Exhibit A, the cost base for most of the autos sold within the Continental European market was the Japanese yen. As the yen rose against the euro, costs increased significantly when measured in euro terms. If Toyota wished to preserve its price competitiveness in the European market, it had to absorb most of the exchange rate changes, suffering reduced or negative margins on both completed cars and key subcomponents shipped to its European manufacturing centers. Deciding to manufacture the Yaris in Japan had only exacerbated the problem.

Management Response

Toyota management was not sitting passively by. In 2001, they had started up some assembly operations in Valenciennes, France. Although Valenciennes still constituted a relatively small percentage of total European sales as of January 2002, Toyota planned to continue to expand its capacity and capabilities to source about 25% of European sales by 2004. Assembly of the Yaris was scheduled to be moved to Valenciennes in 2002. The continuing problem, however, was that it was an assembly facility, meaning that much of the expensive value-added content of the autos being assembled was still based in either Japan or the United Kingdom.

Mr. Shuhei, with the approval of Mr. Okuda, had also initiated a local sourcing and procurement program for the U.K. manufacturing operations. TMEM wished to decrease the number of key components imported from Toyota Japan to reduce the currency exposure of the U.K. unit. But again, the continuing problem of the euro's weakness against the British pound, as shown in Exhibit C, reduced the effectiveness of even this solution.

Case Questions

1. Why do you think Toyota waited so long to move much of its manufacturing for European sales to Europe?
2. If Britain were to join the European Monetary Union, would the problem be resolved?
3. If you were Mr. Shuhei, how would you categorize your problems and solutions? What are a short-term and a long-term problem?
4. What measures would you recommend that Toyota Europe take to resolve the continuing operating losses?

8) Fallstudie Crema, Peru

Hinweis: Sämtliche Angaben entsprechen nicht der Realität, sie dienen nur dazu, der Fallstudie einen komplexen Rahmen zu geben!

Anfang Juni 2019 befasste sich Frau Nele Schwartz, die verantwortliche Finanzmanagerin der Crema AG in Deutschland, mit der Auslandsgesellschaft der Firma in Peru. Obwohl es sich um eine routinemäßige Untersuchung langfristiger Aussichten handelte, die in regelmäßigen Abständen für jede ausländische Gesellschaft von Crema durchgeführt wurde, war hier der seltene Ausnahmefall gegeben, dass sich die Frage aufdrängte, ob sich die Firma nicht aus diesem Gastland zurückziehen sollte. Bis zu diesem Zeitpunkt hatte Crema noch nie eine Auslandsgesellschaft verkauft oder geschlossen. Es gehörte zu den Prinzipien der Unternehmenspolitik, wenn irgend möglich in einem einmal erschlossenen Markt zu bleiben. Immerhin war der Finanzmanagerin bekannt, dass zwei andere internationale Unternehmen in der jüngsten Vergangenheit ihre Verkaufsorganisationen in Peru aufgelöst hatten. In Peru herrschte eine Jahresinflationsrate von 8%, oftmals hatte die Inflation sogar 12% betragen, und der Sol (PEN) schien zu immer neuen Abwertungen verurteilt. Die Crema AG hatte mehrfach in ihrer Weltbilanz einen Verlust für die Tochter in Peru zu verzeichnen gehabt, der mit der Abwertung des Sol (PEN) im Zusammenhang stand.


Nachdem Crema 1996 begonnen hatte, einige Produkte seiner umfangreichen Produktpalette in Peru herzustellen, wurde ab 2003 fast das gesamte Produktionsprogramm in einem eigenen Fabrikgelände in Lima hergestellt. An die Auslandsge-
