GM's Plant X-Brazil (A)

Rio De Janeiro—General Motors Corp. is preparing to build a new small car in Brazil that it plans to offer with one of the lowest sticker prices in the world, giving GM a competitive advantage in developing markets. In addition, according to individuals close to the situation, experimental assembly techniques GM is expected to use in building the car could hold important implications for vehicle manufacture in the developed markets. Already, Volkswagen AG has used South America as a testing ground for radical approaches to making cars more efficiently.

GM's Brazilian experiment, code named "Blue Macaw," would fill a gap in the automaker's lineup in Brazil, where small low-cost cars with 1.0 liter engines—known as "popular cars"—dominate the market. GM plans to produce the car at a new, $600 million plant being built in southern Brazil.

When opened in about 18 months, the plant is expected to rely heavily on suppliers to deliver major subassemblies of the car to the plant. Employees of the suppliers may be involved in some of the assembly work, using an idea long advocated by J. Ignacio Lopez de Arriortua, the executive who left GM for VW in a cloud of controversy. VW also has been applying some of his ideas in South America. GM officials say the new assembly lines will be the so-called Plant X, a design that was the center of their industrial-espionage dispute with Mr. Lopez.


Claudia Teofilo had only a few days to finish the financial structure for GM's new Brazilian plant. The so-called Plant X would represent a large investment by GM—and a big risk—which Claudia hoped to counter with a financial structure and budget with margins for error. Claudia knew that the project was already going forward, regardless of her numbers, but the pressure was still on for her to prove the truth about the financial legitimacy of GM's major expansion in Brazil. After all, every other major auto manufacturer in the world seemed to be pouring capital into Brazil, so why should GM hesitate?

The Brazilian Auto Market

Cheap was the watchword for competing in the Brazilian automobile market. If GM was to actually garner a large chunk of the new automobile market in Brazil, the new car would have to come in under the price of the major competitors, and competition was heating up.
Volkswagen had traditionally dominated the Brazilian market, producing 700,000 autos of the total 1995 Brazilian output of 1.6 million vehicles (a 44% market share). And Volkswagen was not about to sit idly by as quieter competitors made inroads on their market position.

Specific to GM’s target market, Fiat Spa was already well entrenched in the Brazilian market with the Uno at a price of R$11,500 (about US$10,750 at the current exchange rate of 1.07 Brazilian real per U.S. dollar). Ford had also recently joined the fray with the Ka, a 1.0-liter popular car (also termed “ultra-small”) first introduced in Europe. GM believed that if it could undercut the Ka, and undercut it by a substantial amount, it could reap huge rewards.

The Brazilian car market had literally exploded in recent years thanks to governmental economic and political reforms aimed at stimulating economic growth. Working primarily through tax reductions on new car sales, policy changes had caused Brazilian car production to rise by 6% in 1996, to over 1.7 million cars. This made Brazil the seventh largest car market in the world.1 Mrs. Dorthea Werneck, Brazil’s trade minister, was now forecasting Brazilian auto production to hit 3.0 million units by the year 2000, which would move Brazil up to the fifth largest auto producer in the world.2 To double production between 1995 and 2000 would, however, require a massive influx of foreign capital.

Although company after company had announced major new investment initiatives for the Brazilian marketplace, the various Brazilian states were also competing heavily for individual plants. The Brazilian auto manufacturers association, Anfavea, had its hands full in trying to cope with the massive influx of capital and development requests.

- Renault (France), enticed by a $300 million loan by the state of Paraná, had announced a new Meganes manufacturing facility.

- Volkswagen (Germany), already the leading manufacturer of automobiles in Brazil, had announced two new major developments: a $500 million plant to produce 100,000 Golfs per year; and a $500 million plant to produce 80,000 Audis per year. Both plants were to be on-line in late 1998. It appeared that the state of Rio de Janeiro had the upper hand, as the State was putting together a $800 million package for VW’s benefit.

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1 “Foreign Automakers Flocking to Balmy Brazil: Deficit to Demand Expected to Widen,” Michael Kepp, American Metal Market, November 4, 1996.

Honda (Japan) had broken ground on a $100 million facility in São Paulo to produce 30,000 Honda Civics per year beginning in late 1998.

Daimler Benz (Germany) had recently chosen Minas Gercasi for a new $400 million, 80,000 car per year Mercedes manufacturing plant.

Other manufacturers from around the globe were also in some stage of investment planning, including Asia Motors, Hyundai, Peugeot, and Chrysler.

In all, foreign automobile manufacturers had pledged over $10 billion in capital expenditures for Brazil by the turn of the century.

**Co-Production vs. Joint Production**

Plant X was the realization of a not-really-that-new idea. GM would design the car, recruit and organize the suppliers, build and furnish the basic manufacturing floor, but have the suppliers manufacture their parts and inputs on-site and then assemble the car. The manufacturing floor was literally divided by yellow lines indicating where one supplier stopped and the next started. Tier 1 suppliers would both manufacture and assemble on-site, while Tier 2 suppliers would produce only.

The economics of the co-production process were revolutionarily different from those of the customary specialization of production envisioned by Alfred P. Sloan over 70 years ago. It really was no longer General Motors building the automobile, but a consortium of sub-assemblers and input manufacturers with GM as the facilitator, the conductor of this increasingly complex orchestra. The role of the suppliers, in their willingness to produce on-site, devote capital resources to the placement of manufacturing equipment and workers on-site, and in many ways to then share in the risks simultaneously with GM, was a role few had ever been called upon to play. But, they were no longer simply contract players; they were now integral to the production of the co-designed and co-produced product. They were now subordinated stockholders as well as suppliers and workers.

GM believed that the process as designed for the Blue Macaw would allow the manufacture of a world-class economy car—popular car—at a price which would devastate the competition. Actual manufacturing costs were estimated to be 30% to 35% less than traditional manufacturing designs. And because the suppliers were on-site, the need for GM to hold massive inventories, or even to invest in capital-intensive electronic data interchange (EDI) systems to support a just-in-time inventory or kamban system, was eliminated.

GM would now not only produce the car at lower per unit cost, but it could do so with a fraction of the normal capital required for major new automobile manufacturing units anywhere else in the world. Operationally, because of the just-in-time manufacturing capability, the plant would produce cars on order, not on forecast. Again, this meant that the top half of the firm’s Brazilian balance sheet could be substantially reduced. Lower inventories of materials, intermediate inputs, work-in-progress, and finally finished product could be
drastically reduced. Virtual manufacturing was the way one of the engineers had described it in a meeting in Detroit.

**Capital Budget: Plant X**

According to GM’s revised corporate capital allocation policies (CCAP), the project would be evaluated on two different levels:

1. **Project Viewpoint.** This was an in-country capital budgeting analysis in which traditional capital budgeting methods were used. This would require the construction of a complete set of pro forma financial statements, including revenue structure, transfer pricing, capital investment and funding, income statement, statement of cash flows, balance sheet, and finally the capital budget itself. The capital budget, following traditional financial theory, should isolate all net operating cash flows arising from the project, and discount those cash flows by the financial cost (opportunity cost) of that capital back to the present.

2. **Parent Viewpoint.** This was a cross-country capital budgeting analysis which looked more like a cash flow return on investment analysis than the traditional capital budgeting formula followed under part 1 above. The principle was actually quite simple: given the capital put at risk by the parent company (the U.S.-based parent company), did the cash flows returned to the parent over time in the parent’s own currency justify such an investment? This required Claudia to identify all individual incremental sources of cash flow and earnings to GM-US arising from the project over time, regardless of whether they were operational or financial in nature.

There were, however, two very distinct differences in this financial analysis from the traditional approaches Claudia had learned in graduate school. First, the project’s returns had to justify the investment in no more than five years of operations. Cash flows arising past that date were immaterial to GM as the window for the Blue Macaw would only be open for that short technological life. Secondly, the analysis was to be based on cash flows from actual operations, not from any end-of-period boost from a terminal or sale or salvage value. At the end of the five years, the project would either be highly successful, or not. If not, the manufacturing facility, given its unique construction and co-production format with suppliers, would be worthless.

**Plant X: The Numbers**

The magnitude of data already collected from the many different project teams was enormous. Claudia had spent the past three weeks collecting, soliciting, and developing the data set. It was now Spring 1997, and the facility would require approximately 18 to 20 months for completion. Operations would officially begin January 1, 1999, and none too soon given the massive influx of manufacturing competitors into the Brazilian marketplace.

**Revenues.** The driver behind any potential investment, the sales outlook, was by far the most important input. GM’s market strategy group had constructed a detailed sales forecast.
for sales in Brazil, as well as potential export sales to other Mercosur members Chile and Argentina. Exhibit 2 lists the market sizes, growth rates, and potential Blue Macaw market share for each of the three countries.

### EXHIBIT 2 Market Forecast for the GM Blue Macaw

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Project Year</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
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<tr>
<td>New car market</td>
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<tr>
<td>Growth rate</td>
<td>—</td>
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<td>20.0%</td>
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<td>10.0%</td>
<td>10.0%</td>
<td>10.0%</td>
<td></td>
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<tr>
<td>Blue Macaw share</td>
<td>—</td>
<td>—</td>
<td>8.0%</td>
<td>12.0%</td>
<td>15.0%</td>
<td>18.0%</td>
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<td>—</td>
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<td>10.0%</td>
<td>8.0%</td>
<td>8.0%</td>
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<tr>
<td>Blue Macaw share</td>
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<td>—</td>
<td>5.0%</td>
<td>10.0%</td>
<td>12.0%</td>
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<tr>
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<tr>
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<tr>
<td>Blue Macaw share</td>
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<td>—</td>
<td>8.0%</td>
<td>12.0%</td>
<td>15.0%</td>
<td>15.0%</td>
<td>15.0%</td>
<td></td>
</tr>
</tbody>
</table>

Inflation Rates, Exchange Rates, & Prices. Claudia took a deep breath anytime issues related to prices or exchange rates came up in regard to South America. Brazil’s record was not one of the best, but Claudia pinched herself to think positively and look at the recent evidence of the success of the government’s economic stabilization plan, the Plano Real. Prices, inflation rates, exchange rates—all were better, and had remained so for several years now. GM’s biggest brains and computers had churned away for weeks coming up with the estimates on prices and rates for the Blue Macaw project, and the results were condensed in Exhibit 3. These were their best guesses, but were in no way carved in stone. The figures could change, but they would have to serve as the starting point (baseline analysis).

The exchange rate analysis would have to be handled very carefully. The international economics group at GM (and their outside consultants such as Data Resource Inc. in Boston) were forecasting the Brazilian real to depreciate roughly 2.0% per year over the period. That would be nice if true, but the differences in inflation rates between Brazil and the United States would indicate a very different outlook if the currency forecast was based on purchasing power parity (PPP). Claudia knew from the start that although the baseline analysis would use the 2.0% depreciation assumption, a lot of sensitivity and scenario work would be required as well. And that was just for the Brazilian real.

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3 Purchasing power parity assumes exchange rates move in proportion to inflation. For example, if the initial spot rate between the Brazilian real and the U.S. dollar was R$1.0700/$, and Brazilian and U.S. inflation rates were expected to be 16.0% and 3.0%, respectively, the spot rate in one year would be forecast as:

\[
\text{Spot rate (year 1)} = R$1.0700/$ \times \left(1 + \frac{16\%}{1 + 3\%}\right) = R$1.2050/$.
\]
The Argentine peso (APs) was another extreme. Argentina’s 100% U.S. dollar reserve monetary system put in place back in 1992 had been extremely successful. Argentina had gone from one of the most hyper-inflationary economies in the world, with one of the weakest currencies, to a stable fixed exchange rate of one peso per dollar, year after year. The question was whether to simply assume the rate would remain fixed over the term or to use purchasing power parity from the start. The project team had wanted to assume a fixed rate for the baseline analysis, but left the door open for additional sensitivity studies.

The Chilean peso (CPs) completed the Latin triangle. Here again was a currency of distinct character. The economic reforms of the 1980s combined with the richness of copper resources in Chile had made the Chilean economy the showplace of South America in the 1990s. Economic growth, political stability, low inflation, trade surpluses, all had combined not only to preserve the value of the Chilean peso, but to drive it’s value up versus the U.S. dollar. This was not a common sight among Latin American currencies. The baseline analysis called for an annual appreciation of the Chilean peso of 1% versus the U.S. dollar.

The final component of Exhibit 3 which was critical to the Plant X project was pricing. The Blue Macaw had to be priced substantially below the Ka if it was to capture the market share numbers listed in Exhibit 1. The analysts debate had been ugly; the result was a compromise. The Blue Macaw would hit the market in 1999 at a price of R$10,000. It would then see a price growth which was 6.0% annually less than what consumer prices were expected to do. This meant that if consumer prices rose 13.4% in 2000 as expected, the Blue Macaw’s sticker price (MSRP, Manufacturer’s Suggested Retail Price) would increase 13.4%-6.0% in the year 2000. The market strategy group had concluded that with
this pricing structure the Macaw would be able to capture the market shares needed from other majors like Volkswagen and Fiat—and hold it.

**Exchange Rate Pass-through.** Claudia had already expended many hours in working with her colleagues in Argentina and Chile on pricing analysis for those respective markets. The problem was pass-through, the ability of a price to reflect underlying exchange rate changes.

The price in the first year of sales, if all went according to plan, was simple enough. The Brazilian real price of R$10,000 (1999) would be converted to Argentine pesos at the current spot rate of APs0.8976/R$, establishing a retail price in Argentina of APs8,975.70.4

Claudia and her colleagues know, however, that the price in the second year of sales (2000) would not be allowed by the marketplace to pass-through the full change in the APs/R$ exchange rate to consumers. The pass-through would be partial, possibly only 50%. As illustrated in Exhibit 4, if the Brazilian price rose to R$10,740, and the APs appreciated to APs0.8796/R$, the Argentine price should rise to APs9,447.10 per Macaw. But if the Argentine marketplace responded with partial pass-through capability, for example 50%, the price the market would bear would be only APs9,211.40:

\[
8,975.70 + [0.50 \times (9,447.10 - 8,975.70)] = 9,211.40.
\]

Although higher than the previous year, this would still result in lower revenues per car in the currency of cost, the Brazilian real. According to Claudia's local market experts, the increasing relative stability of the economies in both Argentina and Chile would most likely allow annual pass-through rates of only 50% to 60%.

| EXHIBIT 4 Claudia's Sample Calculation of Retail Price Pass-Through in Argentina |
|---------------------------------|----------|----------|
| **Calendar Year**               | **1999** | **2000** |
| **Project Year**                | 2        | 3        |
| Exchange rates:                 |          |          |
| APs/$                           | 1.0000   | 1.0000   |
| APs/R$                          | 0.8976   | 0.8796   |
| **Macaw pricing:**              |          |          |
| Brazilian price, R$             | 10,000   | 10,740   |
| Argentine price, APs:           |          |          |
| 100% pass-through               | 8,975.70 | 9,447.10 |
| 50% pass-through                | 8,975.70 | 9,211.40 |
| **Effective R$ revenues**       | 10,000   | 10,472   |

*Note: In the first year of sales, 1999, the established price is set at the current exchange rate. Partial pass-through initially takes effect in the second year of sales, 2000, where there is an exchange rate change-induced price change possibility arising from the Brazilian manufactured automobile.*

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4 This assumes that as members of Mercosur there would be no tariffs imposed on the Brazilian-manufactured goods, and that any additional distribution expenses were absorbed by GM-Brazil.
**Capital Investment.** The Macaw might be cheap, but Plant X was not. The total capital outlay was expected to total R$290 million for the two-year construction phase. The entire 1997 capital outlay of R$65.0 million would be an equity investment by GM, with an additional R$105 million in equity in 1998. After that, a variety of long-term debt took over. As detailed in Exhibit 5, the project would require a total of R$225 million in 1998.

GM was pretty happy with the debt structure, particularly the below market rates provided by the Brazilian government as part of its aggressive package to attract the manufacturing plant to the state of Rio de Janeiro. The state of Rio de Janeiro was providing a 4-year loan of R$40 million at a 16.0% annual rate. A consortium of Brazilian banks, who were working closely with the State, were providing an 8-year loan of R$22 million at a 20% interest rate. Although the rates appeared to most investors from outside Latin America as incredibly high, they were actually quite low compared to comparable commercial market rates, and were fixed for longer periods than normally available. And, they were local currency.

But GM itself would also put debt into the project. The parent company would provide a R$18 million loan for 10 years at a rate of 18% per annum, but would also denominate the loan in local currency—carrying the currency risk itself (the CFO of GM North America had been very unhappy about this minor detail, but had lost the argument). The funding would be rounded out with the issuance of a Eurobond, eight-year maturity, carrying a 10.50% coupon. The principal was a bit tricky given that there would be a 2.0% issuance fee paid up-front from the bond sales proceeds, and it would be denominated in U.S. dollars. As scheduled, net proceeds would need to be R$40 million in 1998, so Claudia made a note to back out the final issuance principal in 1998 so the full debt amortization schedule could be finished up.

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5 GM had debated the interest rate on the internal loan. Although the Brazilian tax authorities had not yet given a ruling on the issue, GM believed that it could probably set the rate anywhere between 15% and 22% without alarming the Brazilian tax authorities.
Depreciation rates on capital investment in Brazil were largely straight-line and traditional. Standing facilities—the manufacturing plant—were assumed to have 25-year economic lives, and would therefore be depreciated at 4% per year. Equipment life was assumed to be 10 years, but the paint shop had been given preferential treatment with a three-year life. For manufacturing facilities which were multi-shift (Plant X would run two shifts per 24-hour period), the Brazilian tax code allowed increases in normal depreciation rates by 50% for two shifts and 100% for three shifts. Every little bit helped towards taxes and cash flow.

Manufacturing Costs. The entire cost analysis had been conducted for a 1999 startup, with a R$10,000 retail price for the Blue Macaw. On a per unit basis, labor costs were estimated at R$1,650/unit in 1999, and would rise at the estimates for labor costs shown in Exhibit 3.

Power and utilities were contracted with the State, and had been the subject of lengthy debate. The State was clear, it wanted jobs. But since the design of the facility was dependent on supplier/assembler jobs, and not on direct employees of GM itself, the state power authorities had finally settled on a volume-price mechanism. At annual production levels less than 450,000 units, GM would pay R$1,050 per unit in utility fees. When production rose above the 450,000 unit level—which was thought to require the level of employment the State had in mind, power charges would drop to R$850 per unit. In addition, power costs were assumed to rise at the same annual rate as consumer prices in Brazil.

Local materials were the second most expensive manufacturing cost at R$2,150 per unit. This was a substantial part of the manufacturing cost, and represented the majority of the costs payable to the co-production partners, since GM itself actually did not assemble the car. Material costs were expected to rise at the forecasted rates listed in Exhibit 3. However, compared to general price inflation in Brazil, these costs, sub-components and assembly by the suppliers, were expected to rise at relatively modest rates. But that was only the forecast.

It was the imported sub-assemblies from GM itself which had raised a number of eyebrows in the Brazilian government offices. The electronic engine ignition and fuel supply sub-system was manufactured in Ypsilanti, Michigan, at the old Willow Run Plant. The plant had recently been completely renovated, now possessing state-of-the-art computer-aided-design (CAD) systems throughout. The cost per unit was estimated at US$1750, to which GM added a 20% markup for arms-length equivalency on third-party sales. The Brazilian government then slapped on a preferential tariff rate on the imported sub-assemblies. Plant X paid in Brazilian real, but the cost was still thought high by international

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6 The Willow Run plant had gone through a number of lives, not the least of which was as the leading manufacturer of B17 bomber aircraft in World War II. It had also been the home of Rosie the Riveter of women-in-the-war work-effort fame.
7 Depending on the transfer pricing cost-accounting methodology applied to different foreign affiliates around the world, GM’s margin on similar transfers ranged between 15% and 30%.
8 See Exhibit 3 for rates designated by the Brazilian government as applicable to preferred producers like GM. Preferred producers, according to the Brazilian regulators were companies with existing manufacturing operations in-country.
standards (in GM’s opinion at least). The sub-assemblies were assumed to rise in price in step with U.S. inflation over the planning period.

Other non-direct costs included general and administrative expenses, estimated at 6.0% of annual sales, distributed overhead expense charges by GM-North America amounting to 1.50% of sales annually, and the Plant X licensing fee, 2.75% of sales. This latter charge by GM-North American to GM-Plant X was for the use of the technological expertise and development held by the parent company. GM in the past had not utilized licensing fees for cash flow repatriation, but their financial strategists were encouraging its use when possible—for example, with a new technology like that of Plant X. Both the distributed overhead charges and the licensing fees represented costs to Plant X but incomes to GM-North America.

Working Capital Management. An area of serious concern to Claudia was working capital management. Claudia’s first step was to review what she knew.

- Normal credit terms throughout Brazil were 150 to 180 days. By North American standards, this seemed incredibly long, but it was the norm in Latin America and local suppliers and buyers operated on that basis.

- If, however, a firm in Brazil wished to pay early (60 days was early) instead of the standard 180 days, buyers were eligible for a 16% annual discount on payables.

- If Plant X was to push its buyers to pay early, and not follow standard A/R payment terms of 180 days, Claudia estimated that Plant X would suffer roughly 4% annual bad debt expense on these receivables.

- GM in its North American operations was often willing to provide 90-day credit terms to independently-owned automobile dealerships to aid in their inventory financing. GM-North America’s representatives had already explained to Claudia that if she wanted non-standard terms (greater than 90 days, and 180 days was the absolute limit), she would pay GM’s weighted average cost of capital (WACC) on the transfer balances.

If days sales outstanding (DSO) on receivables were the same as DSO on payables, regardless of what the actual days were, working capital would be largely self-financed. However, given that a large proportion of the payables were to the U.S. parent, and pushing the parent to longer payment terms was costly, Claudia knew that the costs of working capital would end up being critical to the project’s financial results. In fact, given the lengths of these payment terms, the entire current asset/liability structure of Plant X’s balance sheet would be disproportionately large.

The build-to-order concept had a drastic benefit on the balance sheet in the form of inventories. It was estimated that inventory would drop to as little as 8% of current year manufacturing costs—not following year’s forecast manufacturing costs. This was a major bonus point for the Plant X design.
Assuming all went according to plan (and it rarely does), GM had decided to lower their target cash balance to 1.5% of current year sales. Given the substantial margins on the production and sale, combined with the lower capital burdens and charges of the Plant X design, the assumption was that the Blue Macaw would be generating substantial cash flow in its first year, sufficient to preserve management’s goals. Claudia was not so sure. If cash flow was not sufficient in the first year or two of operations (1999 and 2000), then additional capitalization was needed up-front, or additional lines of credit opened down the line. Of the existing long-term debt sources, it appeared that the debt extended by GM itself was the only elastic source. If GM could get access to short-term debt for working capital supplements in Brazil (and it was a big if), the interest rates were likely to approach 30% per annum.

Financial Rates. Claudia had little choice over the capital structure assumptions applied by GM to worldwide investment—they were dictated by corporate policy. GM officially had a capital structure which was 35% debt (average debt cost of 7.40%) and 65% equity. GM’s beta, ß, was estimated at 0.80. Current market rates of return, for example the S&P 500 average over recent years, was 14.3%. The 20-year Treasury bond in the United States, the risk free rate, was trading right at 7.00%. GM, like many other multinationals, had used a variety of approaches to measuring risk on foreign investments. Most solutions had not really worked. The current practice was to require an added 6.0% premium over and above GM’s capital costs in return on foreign projects.

But Brazil was another issue. Since the Plano Real was instituted on July 1, 1994, by then President Cardoso, the Brazilian bolsa had performed quite well, averaging 25.0% per annum. But since even governmental debt issued in-country was currently yielding 16.0%, this was not necessarily phenomenal. But what of Plant X’s beta? Claudia’s standard procedure was to use the average beta of comparables operating in-country, but there really weren’t any in this case. The official guess had been 1.50, but was left open to discretion. At least this would allow her to calculate a weighted average cost of capital for the wholly-owned subsidiary.

Taxes. The Brazilian corporate income tax, like that of the United States, was 35.0% on both ordinary and capital gains income. Withholding taxes were specified by bilateral tax treaties. Unfortunately, Brazil and the United States had never successfully concluded a bilateral agreement, so the U.S. fell into the non-treaty designation category for withholding taxes on dividends (25.0%), interest payments (15.0%), and royalties, license fees, and distributed overhead expenses (10.0%). The tax treaty status was important because GM was planning to have Plant X remit 20% of net income annually as dividends to the parent company, and the 25% withholding tax would raise the burden substantially.

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9 The actual corporate income tax itself was 25%, but since all firms were also responsible for a 10% income tax for social contributions, the effective tax rate was 35%.
10 Although not in effect in 1997, the Brazilian government was considering the institution of a 10% additional withholding tax on dividend payout rates in excess of 50%.
As usual, Claudia then had spent a few hours with the controller for international tax, Grøn Pincenez, to review the tax implications of remitting money back to the parent company. Grøn had used a simplified (all in U.S. dollars) example to explain U.S. taxation of foreign-sourced income. (All numbers, including tax rates, are unrelated to Brazil.)

If the foreign subsidiary had income of, say, $100, and paid corporate income taxes of 40%, that left $60 for distribution to stockholders (the parent company). If the parent instructed the sub to distribute 50%, then a dividend of $30 would be declared and remitted to the parent. If there were any withholding taxes imposed on the dividends, say 10%, the $30 would be reduced by $3, leaving a net remittance to the parent of $27. The tax authorities (at least the ones in the United States), would then gross-up the dividend remitted, adding back all the taxes already paid on the distribution in order to calculate the theoretical U.S. taxes which would be paid if that same income had been generated at home. The U.S. tax authorities would then allow credit, foreign tax credits, for those taxes already paid or deemed paid. If additional taxes were due, they would be netted from the remittance, reducing the dividend remitted from the subsidiary.

Grøn reminded Claudia that if the firm ended up with excess foreign tax credits, they would be of limited use. The problem was that excess foreign tax credits cannot be applied against domestic-source income tax liabilities, only against other similar foreign-source income tax liabilities. Excess credits can, however, be carried back two years and forward five years, but often when there is an excess one year, there is excess for several years. Claudia made a note to compare how dividend income created foreign tax credits (being after-tax distributions from the subsidiary) compared to other income such as license fees (which were an expense of the subsidiary prior to taxes, and an income to the parent).

Grøn went on to explain (he was now really getting on Claudia’s nerves) that active foreign-source income (dividends remitted) was treated separately from passive foreign source income (interest, royalties, and distributed expenses). The passive income which the parent would earn from the subsidiary would be treated separately and additional U.S. tax liabilities determined. The real bad news was that any excess foreign tax credits in one category, like passive income, could not be applied against tax liabilities due in another category, such as active foreign source income or even domestic source income.

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11 Claudia remembered a seminar in New York in which the speaker spoke of repatriating earnings in such a way that excess foreign tax credits were minimized by managing the profitability of the subsidiary itself.
Time is Money

Claudia Teofilo looked down at the calendar, looked up at the clock, and realized time was running short. She had less than three weeks before her financial recommendations had to be in and she had a lot of work to do. Luckily, it was working out to be a hotter and more humid summer than normal in lovely and tropical Detroit, so to work she would go.

Case Assignment

1. You are Claudia Teofilo, and you work for GM. Using Excel, create a spreadsheet workbook with the complete series of financial statements for both the project and parent capital budget viewpoints.

2. The series of workbook pages should be in the following order:

<table>
<thead>
<tr>
<th>Name</th>
<th>Exhibit</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ass</td>
<td>—</td>
<td>Assumption inputs</td>
</tr>
<tr>
<td>Ano</td>
<td>—</td>
<td>Assumptions which are made on an annual (ano) basis</td>
</tr>
<tr>
<td>Rev</td>
<td>1.</td>
<td>Revenue projections</td>
</tr>
<tr>
<td>Cap</td>
<td>2.</td>
<td>Investment, capitalization, and depreciation schedules</td>
</tr>
<tr>
<td>Debt</td>
<td>3.</td>
<td>Debt amortization schedules and FX gains (losses)</td>
</tr>
<tr>
<td>Cost</td>
<td>4.</td>
<td>Transfer prices &amp; manufacturing costs in Brazil (per unit)</td>
</tr>
<tr>
<td>Bal</td>
<td>5.</td>
<td>Plant X’s pro forma balance sheet</td>
</tr>
<tr>
<td>WACC</td>
<td>6.</td>
<td>Weighted average cost of capital for Plant X and GM</td>
</tr>
<tr>
<td>Inc</td>
<td>7.</td>
<td>Plant X’s pro forma income statement</td>
</tr>
<tr>
<td>Mac</td>
<td>8.</td>
<td>Margin or per unit cost/profit analysis of the Blue Macaw</td>
</tr>
<tr>
<td>CFs</td>
<td>9.</td>
<td>Plant X’s pro forma statement of cash flows (indirect form)</td>
</tr>
<tr>
<td>BRZ</td>
<td>10.</td>
<td>Project Viewpoint Capital Budget</td>
</tr>
<tr>
<td>Rem</td>
<td>11.</td>
<td>Remittance worksheet for cash flows to U.S. parent</td>
</tr>
<tr>
<td>GM</td>
<td>12.</td>
<td>Parent Viewpoint Capital Budget</td>
</tr>
</tbody>
</table>

3. Now use the financial model to analyze the project. Although we have assumed specific values for a variety of variables, these values could vary. It is up to you to determine over what range variables may move (sensitivities), and in what combinations (scenarios).

Your write-up should summarize the fundamental results, primary and secondary valuation issues, and your recommendations regarding the tweaking of the financials. The project has already been accepted, so do not waste your time arguing with it, work with it. (Building the model is only the first step; the assignment is analysis.)