

# COUNTERPOINT



**A Note:****The Global NPV Model**

by

**Robert G. Bowman †****1. Introduction**

**B**usiness schools around the world are caught up in a variety of fast track programs to internationalise their curriculum. In fact, the appropriate descriptor is now the globalisation of the curriculum. Finance has a number of advantages over some other disciplines in business in that international finance has long been an integral part of the standard curriculum. Unfortunately, this course is often an elective and thus of less value when it comes to seeking publicity or credit for globalisation efforts. The more international elements we can build into our courses the better we are perceived externally and internally. The adaptive responses of finance departments have been varied. Some universities are making international finance a required course, while others are adding an international segment to the material in existing courses. The proposal put forth here is a fundamental globalisation of the finance curriculum. This proposal goes to the very heart of financial management; the capital budgeting decision and the net present value model.

**2. Globalisation of the Net Present Value Model**

**T**he backbone of capital budgeting is the Net Present Value (NPV) Model. This model is taught in every introductory financial management course in the world. Furthermore, every finance program in the world offers an introductory financial management course. So a globalisation of the NPV model will impact upon all of our students and create value for our departments and universities. An advance such as is offered here has the potential to globalise every finance curriculum on the globe.

The NPV is a measure of the value created today by undertaking an investment. It is obtained by summing the present value of all cash flows related to the investment. Mathematically, it is expressed as:

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$$NPV = \sum_{t=0}^{\infty} \frac{C_t}{(1+r)^t}$$

where:  $C_t$  = cash flow expected at time  $t$ ; and,  
 $r$  = required rate of return.

To globalise the NPV we must incorporate cash flows in all the various relevant currencies into the one model. Thus, we want a model which can be used to aggregate diverse cash flows across international boundaries as well as across the time boundary. To do this we must first recognise that the various local currencies must be converted into a common currency before the present valuing takes place. This is accomplished by multiplying the units of local currency (e.g., pounds, lira) by the exchange rate for the currencies at the relevant time. Using the notation ULC for the unit of local currency and ER for the appropriate time dated exchange rate, we can derive the Global NPV Model:

$$NPV = \sum_{t=0}^{\infty} \frac{ULC_t ER_t}{(1+r)^t}$$

This model is elegant in its simplicity and yet will allow the finance department to achieve a globalisation of a substantial portion of its curriculum.

### 3. Conclusion

The pressure to globalise our curricula is impacting virtually everyone teaching finance. The purpose of this paper has been to introduce the Global NPV Model which can be used in place of the traditional NPV Model in our courses in financial management. As the capital budgeting topic is so pervasive in finance and as the Global NPV Model can also be applied in some aspects of investment courses, this one enhancement may be sufficient to achieve a 30–50% globalisation of your curriculum. The result is the intuitively appealing notion that globalisation will involve an ULCER.

