Raymond Vernon. 1966. International investment and international trade in the product cycle. Quarterly Journal of Economics 80, pp. 190-207.

Scientific Knowledge

Amongst developed countries, there is equal access to knowledge of scientific principles.

In developing, particularly LDC, countries, one cannot even assume this.

Probability of Applying Scientific Knowledge

There is a large gap between equal access to knowledge of scientific principles and the embodiment of such principles in a marketable product.

This gap can only be bridged by entrepreneurs' responsiveness to opportunities. Such responsiveness depends on ease of communication, and this on location.

Example: Why do USA firms spend more on product development than other firms?

- high income – demand (quality and quantity);
- high wages;
- plenty of capital, technological and entrepreneurial capabilities;
- entrepreneurs with market awareness – unfilled need

Hence, US producers are first to spy an opportunity for high income or labour saving new products and/or processes.

Product Development Cycle

New product might be quite un-standardised – inputs, processing and final specification. Requires location within the market:

- freedom to changing inputs
- price elasticity of output for different firms is low (firm specific product differentiation, monopoly, captive market);
- need for swift communication with consumers, suppliers and competitors.

Hence, he who sees the market for a new product in the USA may start by locating its production site in the USA.

Maturing product: increase in demand leads to certain degree of standardisation. Variety may also appear (not least because entrepreneurs wish to avoid the full brunt of price competition). But scale and mass production implies long-term commitment, which involves standardisation.

Need for flexibility declines and costs analysis become more important: where to locate production facilities.

Exports (as demand elsewhere increases) may lead to opportunities abroad. Firm's decision to FDI depends on the differential between home marginal production costs + transport costs and average costs of setting production abroad. If the producer has FDI around the world, costs of setting production facilities may not vary significantly. If full scale is attained, the difference is in relative labour costs.

Once one producer has invested abroad, others will see it as a threat to the status quo: their market share, uncertainty about future costs and cheap imports, etc. They will reduce uncertainty by investing. *FDI by an exporter becomes a prudent means of forestalling the loss of market.* The USA will thus export more labour intensive – due to un-standardised stage of product cycle – and import capital intensive – due to standardised product.

Standardised product: MNEs may not start new products in LDCs because of costs of information and externalities, limited capabilities as well as the fact that LDCs may not be the larger market for such products.

Standardised products that require significant inputs of labour, face high price elasticity of demand for output of different firms, production process does not rely heavily on externalities, that could be described precisely by specification and can be produced for inventory without the risk of obsolescence, and with high value content to absorb freight costs (example, textiles), will be the best candidates to be produced in LDCs. FDI of this nature is common when there is, for example, risk of import restriction or access to market quotas.

These firms may be more capital intensive than the rest of the economy. FDI is interested in opportunity cost of its investment, not the economic cost of capital in a given country. And interest rates vary significantly. Hence, capital costs may not pose a problem.