

represents the "core" EU Member States (Germany, France, Italy, Netherlands) but excludes the UK, whereas EU5 includes the UK.

Thus, if the UK participated in EMU, then intra-EU trade would be at least 17 percent of world exports, and this would be now denominated in euros. But intra-EU trade would not be counted as international trade, as it would take place between EU Member States. So now treating the EMU bloc as one region, this implies that total euro invoicing will be 16.4 percent of pre-EMU world trade or 22.2 percent of post-EMU world trade. Additional assumptions used in this simulation were that there is no difference in the currency distribution of trade invoicing for intra-EU trade invoicing and extra-EU trade invoicing, and that the trade invoicing practices of EU5 are the only relevant EU data to be incorporated (as they are the only data available for the EU). The former assumption will tend to overstate the use of the euro in extra-EU trade, whereas the latter assumption will underestimate the amount of euro invoicing in extra-EU trade. To compensate for the usage of only EU5 data, Hartmann assumes that half of the exports from the remaining EU Member States are invoiced in home currency. Using this assumption, the figure in the last row of the table (EU15) is calculated. In order to ensure that the results do not suffer from bias because of an overestimation of euro usage, then several assumptions could be made about the nature of euro invoicing after EMU, perhaps taking the view that invoicing would follow the same pattern as currently used in the US, Germany, France or the Netherlands. Table 3.3 shows the results of making such assumptions.

**Table 3.3**  
Example Scenarios for Euro Invoicing Post-EMU  
(in percentage terms)

Example for Export Invoicing Share	Euro Invoicing in EU Exports (%)	Euro Invoicing in World Exports (%)
US	92	28
as per 1992 patterns	82	25
Germany	77	24
France	55	19
Netherlands	43	16

Source: Hartmann (1996) and own calculations.

Under these most optimistic and pessimistic scenarios, Hartmann claims that euro invoicing would be at minimum 19 percent of world exports and at maximum 28 percent of world exports. The US dollar would no doubt retain its pre-eminent role as the world's vehicle currency, but these calculations suggest that the euro would have an initial level of at least 16 percent of world trade invoicing and may grow significantly once the euro has gained acceptability as an invoicing currency.

There are several grounds on which these results can be challenged. First, even if firms decide to switch from the national currency that they were using before the EMU process began to the euro, they will likely do so over the three year period to 2002, as specified in the Commission's changeover scenario. So even though EMU will likely begin in 1999, there will not be a sudden once-and-for-all shift into euros for export invoicing - it will happen over several years.

Second, given a non-zero probability of EMU failure, there is an incentive to delay any changeover to the euro to the end of phase B of the final stage of EMU - in other words to 2002, and