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# GLOBAL ELECTRONICS INFORMATION NEWSLETTER

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## OFFSHORE ASSEMBLY

**Semiconductor International** (February, 1982) has published another survey of labor costs in chip assembly. Ben Adamo, of Motorola, evaluates the various factors influencing a company's decision to manufacture in the Far East. Working against offshore expansion are the threat of high transportation costs and the cost of maintaining work-in-process inventories (as chips are shipped to and from the Far East) at current interest rates. He projects that the dual in-line package - the familiar caterpillar shape of the finished chip - may be replaced by chip carriers and automated packages for which manual labor is less important. He also notes risks in less developed countries, such as "racial antagonism, political instability, and hostility towards foreign manufacturers."

Adamo reports, "Foreign labor rates and fringe benefits have been inflating by as much as three times the rate of U.S. wages and fringe benefits. If this trend continues, labor in a site like South Korea, which is currently experiencing a wage inflation rate of about 25%/year could cost about the same as U.S. labor by 1990."

Adamo's linear projections are ridiculous. Merely the fact that U.S. manufacturers are worried about wage inflation in Korea will lead the Korean government to renew its crackdown on labor. His figures on 1980 average pay, however, appear to accurately portray present wage costs. Figures are in U.S. dollars per hour.

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Country	Wage	Wage + Fringe
U.S.	5.92	8.06
Hong Kong	1.15	1.20
Singapore	0.79	1.25
South Korea	0.63	2.00
Taiwan	0.53	0.80
Malaysia	0.48	0.60
Philippines	0.48	0.50
Indonesia	0.19	0.35

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Meanwhile, **Business Week** (March 15, 1982) reports that automation, as well as recession, are cutting into jobs in Far East assembly locations. It reports that Signetics plans to halve its Korean workforce, now numbering about 2,300, "when it completes an automation program in the next three to four years."

**Business Week** also notes that automation is making it profitable for some companies to shift production to the U.S., saying "Both Motorola Inc. and Fairchild Camera & Instrument have recently moved some lines back to the U.S. where modern computer-controlled assembly of chips costs the same as using Asian labor."