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## RUNNING HOME?

For years, some observers of the integrated circuit industry have been predicting a massive shift of assembly (bonding) from offshore locations to the United States. Fairchild already assembles microprocessors in Wappingers Falls, New York. Motorola bonds chips in Austin, Texas.

Articles on the subject point out that wage scales in some Asian countries are rising faster than in the U.S., that shipping charges are rising, and that start-up costs such as training are significant as well. (See, for instance, **Electronics News**, June 7, 1982) At this point, however, offshore assembly still provides savings for most product lines, and at most one can expect the offshore chip assembly workforce to stabilize, not decline.

The biggest push to return assembly home will come from the gradual automation of the assembly process. As more sophisticated machinery is introduced and linked, each unit of investment requires more skilled labor while dramatically reducing the need for semi-skilled workers. **Electronics** (August 11, 1982) analyzed the manufacturing cost per integrated circuit in Hong Kong and the United States. The figures show that the installation of automatic bonding machines with pattern recognition, six of which could be operated by

one person, would virtually eliminate the offshore cost advantage.

Manufacturing Cost Per Device (US\$)		
	Hong Kong	U.S.
Manual	.0248	.0753
Semiautomatic	.0183	.0293
Automatic	.0163	.0178