Price and Quality Effects of VERs — Revisited

A Case Study of Korean Footwear Exports

Jaime de Melo
and
L. Alan Winters

Voluntary export restraints on exports of Korean footwear re-
sulted in significantly higher prices to the restricted markets and
a mild downgrading — rather than the expected upgrading — in
quality.

The application of index numbers to disaggregated Korean footwear exports during 1974-85 suggests that binding voluntary export restraints (VERs) led to significant price increases but not to the upgrading of quality predicted in earlier theoretical analyses.

Unlike most previous empirical studies of VERs, the results de Melo and Winters present in this paper were derived from exporters' rather than importers' data. Thus they provide a more direct test of the reactions of exporting countries subject to VERs.

Drawing their comparisons from multilateral indices (adjusted for changes in product and country mix), the authors found that the price of Korean footwear exports to the United States (and to a lesser extent to the United Kingdom) rose significantly in the years when VERs were binding (when quotas were filled).

VERs were associated less with quality upgrading and if anything — for exporters whose objective was foreign exchange earnings rather than profit maximization — were possibly associated with quality downgrading.

The pattern of quality changes across markets seems not to have varied significantly during the VER period, so adjustment costs may have been enough to prevent a change in product mix toward restricted markets.

The empirical results, the authors conclude, confirm that as a result of VER-type restrictions on shoes, rents accrue to the exporting country (and some rents to the importers, if importing is not a competitive activity) — but shoes do not show the improved quality that automobiles do under similar restrictions.

This paper is a product of the Trade Policy Division, Country Economics Department. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Maria Ameal, room N8-073, extension 61466 (36 pages with tables).

Price and Quality Effects of VERs Revisited:
A Case Study of Korean Footwear Exports

by
Jaime de Melo
and
L. Alan Winters

Table of Contents

1. Introduction

It is expected that when a binding voluntary export restraint (VER) negotiated between two parties is for broadly defined product categories, the price of the restricted products will rise in the restricted market. It is also expected that producers in the exporting country that entered the VER will shift production from less to more expensive product categories (Falvey (1979), Rodriguez (1979)). Thus a quality upgrading effect is predicted by a VER. Less upgrading is expected when restriction is by an import quota because import quotas are usually extended on a multilateral basis and commodity categories subject to quotas are often less loosely defined than categories subject to VERs. 1/

Much empirical support has been produced showing that exporters facing binding VERs have changed their product mix shipped to the restricted market towards higher priced varieties. For highly differentiated products such as autos, hedonic price regressions have indicated that a statistically significant increase in the price of autos sold in the restricted market was attributable, at least partly, to an improvement in quality where quality is measured in characteristics space [Feenstra (1986), (1988), de Melo and Messerlin (1988)]. For more homogeneous products like footwear, index number comparisons that control for changes in product mix among the constrained products have also been claimed to indicate quality upgrading after the VER came into effect (Aw and Roberts, 1986).

To our knowledge, all evidence on quality upgrading has relied on the analysis of data referring to imports in the constrained market. This has allowed for comparisons between constrained and unconstrained suppliers to the restricted market; but this, however, is not the issue addressed by the theory. Data on imports to the restricted market do not allow for comparisons between a particular exporter's sales to different markets, which is the phenomenon on which theory offers a prediction, namely that exports to a constrained market will be upgraded (presumably more rapidly than exports to unconstrained markets).

This paper measures quality and price effects of VERs using exporting country data. Our application is to Korean exports of footwear to various industrial countries over the period 1974-86, a period which offers both instances and removals of VERs. We approach the measurement of price and quality effects through the use of Tornqvist numbers previously applied by Aw and Roberts (1986, 1988) to US imports of footwear. Our results indicate the existence of binding VERs -- as reflected in price increases in the restricted markets when the VERs were in effect -- but quality downgrading. We also provide an interpretation for the observed downgrading.

The paper is organized as follows. In the remainder of the introduction, we summarize briefly why a VER may (or may not) be expected to provoke upgrading. In Section 2, we recall the advantages of index numbers over unit values to measure price and quality shifts We also recall the assumptions under which index numbers are likely to be good indicators of price and quality shifts and describe the formulas upon which rests the evidence in the paper. Section 3 describes briefly the VERs into which Korea entered for its exports of footwear. Our evaluation of price

and quality shifts starts with multilateral comparisons in Section 4. The evidence is for 14 categories of footwear exported to 7 destinations. Because more disaggregation is preferable, in Section 5, we extend our comparisons to 26 footwear categories. However, at this level of disaggregation, we can only make bilateral comparisons because the multilateral data contain too many missing observations. The evidence in Sections 4 and 5 should therefore be viewed as complementary. Conclusions are in Section 6.

The theoretical prediction that a VER will lead to quality up-grading rests on the assumption that "quota tickets" are freely traded among quota recipients. 2/ Implicit in these theoretical studies is not only that perfect competition prevails among firms, but also that firms can costlessly alter their product mix (Falvey, 1979; Rodriguez, 1979) or that firms are specialized in one type of product (Chang, 1984). Under these assumptions, firms will alter their product mix so as to achieve equal unit rent of each variant supplied. Since per unit rent will initially be higher for the higher priced (quality) product, the VER will induce quality upgrading.

For relatively undifferentiated products with low start up costs like footwear and textiles, it is safe to assume that production will continue to take place under competitive conditions so that market structure is exogenous with respect to the imposition of VERs. However, even if there are no adjustment costs and "quota tickets" are transferable among exporters, the perception of foreign exchange scarcity (perhaps in part because of VERs) may lead to an attempt at minimizing the loss of export earnings loss rather than maximizing profits. 3/

Bark and de Melo (1987) have studied the case of export minimization loss with and without quota ticket transferability. In that

case, foreign exchange losses will be minimized when marginal revenues (MRs) are equated implying that the export composition will shift towards the high quality (low quality) product if MR_H is greater (smaller) than MR_L. Representing marginal revenues in terms of import demand elasticities and initial conditions, Bark and de Melo show that, for most elasticity ranges, the conditions for upgrading under competitive quota ticket trading are the conditions for downgrading under a quota ticket allocation (with no transferability) to minimize foreign exchange earnings loss, and vice-versa. One must therefore conclude that the direction of product mix change in response to a VER cannot be determined unambiguously.

2. VERs on Korean Footwear Exports 4/

Korean exports of footwear provide an interesting case study of the price and quality implications of VERs for at least two reasons. First, unlike many other commodities subject to VERs, VERs on footwear intensified during a relatively short period of time, between 1977 and 1982. After mid-1981, the intensity of protection on footwear trade subsided either because non-tariff measures were not renewed (US) or because the restrictions ceased to be binding (UK). Hence, footwear offers a unique experimental design with restricted observations surrounded by unrestricted ones. Second, Korea is among the largest footwear producers in the world. Third, in 1985, footwear exports were the fifth largest Korean export earners with 87 percent of domestic production exported.

Table 1 summarizes the main restrictions on Korean footwear exports for the major importers of Korean footwear and the relative importance of each country in total Korean footwear exports. By far the most important purchaser of Korean footwear exports is the US which nego-

Table 1: MAJOR RESTRICTIONS ON KOREAN FOOTWEAR EXPORTS

Country	Share of Korean Footwear Exports (1978)	Footwear Type	Exporters	NTM a/	Years
USA	62.8	Non rubber	Korea, Taiwan	VER	July-77-June 81
UK	4.9	All footwear	Korea, Taiwan Poland	VER	Jan 1979-
Canada	4.4	All footwear	All	MFN Quota	1977-85
Japan	16.1	Leather	All	Value quota	1952-
Norway	0.7	Rubber boots	Korea, Taiwan	VER	1979
Sweden	1.9	Rubber boots Leather and plastic	Korea, Taiwan All	VER and quota Non-MFN quota	1970-84 1975-77
Australia	1.0	All footwear	MFN	Value import quota	1974
EEC b/	8.7	All footwear	All	Posteriori import surveillance	1978-

a/ NTM : non-tariff measure.
b/ Export share excludes UK.

Source: adapted from Hamilton (1989).

tiated a VER (also known as an Orderly Marketing Agreement -- OMA) with Korea for four years starting in July 1977. The second most important purchaser is Japan which has maintained a value quota on an MFN basis for imports of leather footwear, at least since 1952. There is no information indicating a change in Japanese policy during our sample period (1974-86). Furthermore, for countries with a value quota like Japan and Australia, one would not expect an inducement to change product mix. The UK footwear industry negotiated bilateral VERs with the major suppliers of British footwear imports since 1979, but the evidence shows that quotas have not been filled since 1982. 5/ Like the UK, Canada followed in the footsteps of the US, but Canadian quotas were extended to all countries on an MFN basis. It is therefore unclear whether these restrictions should be expected to have an effect on Korean exports, especially in view of the small size of the Canadian market for Korean exporters. Finally, Norway and Sweden extended restrictions to Korea (and Taiwan) mainly for rubber boots.

In view of the pattern of Korean footwear exports, and the relative importance of trading partners which established NTMs, we aggregate Norway and Sweden with the rest-of-the world (ROW) and disaggregate Korean footwear exports with respect to seven partners: US, Japan, Unrestrained 6/ EEC, UK, Canada, Australia, ROW. In this "country" classification, we expect VERs to affect differentially the US, the UK and perhaps Canada when the NTMs were in effect.

3. Index Numbers for the Measurement of Export Prices and Quality

Though frequently used for price comparisons, unit value indices are biased because they fail to correct for changes or differences in the

mix of sub-products within any product heading of the trade bundle. In particular, a change in the mix of differently priced sub-products will result in a change in the product-level unit value index even if there is no change in any price. In our study of Korean footwear exports, one might expect to observe price increases when the VERs on Korean footwear exports became binding. If, however, there were also a simultaneous change toward the shipment of more (less) expensive shoes to the restricted market, the unit value index would overstate (understate) the true price change. It is generally agreed that unit values which are constructed at the industry level, and which consequently treat all commodities as perfect substitutes, lose reliability with aggregation.

These drawbacks of unit-value indices used in most previous studies of VERs [e.g. Yoffie (1983)] can be remedied with the use of index numbers. Relying on the theory· of index numbers developed by Caves, Christensen and Diewert (1982), and applied by Aw and Roberts (1988) to the study of US footwear imports, we construct multilateral price indices to compare price and product indices for Korean footwear exports to different countries.

Let k be an index over footwear categories, c an index over countries, and i and j refer to footwear bundles, where i and j may refer to a country c, or a time period t. Assume that the price per unit of service of bundle i is equal to the average price per unit of quantity (unit value), P_i, divided by the level of quality, A^i. As shown by Caves, Christensen and Diewert (1982) the product-mix-adjusted Tornqvi.: multilateral price index defined by:

(1) $\quad \ln P_{ij}^* = \frac{1}{2} \sum_k (s_k^i + \bar{s}_k)(\ln P_k^i - \overline{\ln P_k}) - \frac{1}{2} \sum_k (s_k^j + \bar{s}_k)(\ln P_k^j - \overline{\ln P_k})$

allows for transitive cross-sectional and time-series comparisons. In (1), $\bar{S}_k$ and $\overline{\ln P_k}$ are the hypothetical cost and price shares (derived by taking a logarithmic mean over all commodities in the sample) against which the bilateral comparisons are made. Furthermore, with the above definition of quality, one can show that the change in unit value between any two observations is the sum of quality change and the Tornqvist price index, i.e.

$$(2) \qquad \ln P^i - \ln P^j = \ln A^i - \ln A^j + \ln P^*_{ij}$$

As recognized by Aw and Roberts (1988), multilateral comparisons can be severely affected by missing observations since the construction of P^*_{ij} requires observations on the price of exports for each footwear category, to each country and for each year. If the mean share for a footwear category is large, an imputed price for a missing commodity-country flow may receive substantial weight in the overall index.

Multilateral comparisons are therefore likely to require a relatively higher level of aggregation to minimize the number of missing observations. For the detection of quality change, aggregation is a drawback since it limits the scope for detecting quality upgrading. (The scope for upgrading is reflected in the ratio of the highest to the lowest commodity unit value and the shares of trade in these commodities). On the other hand, time-series comparisons derived from bilateral indices are less affected by missing observations for two reasons: first, prices need not be inputed if a commodity is not exputed in adjoining years; second, commodity-country combinations for which certain observations are zero usually have a small share in total export value and hence receive little

weight in the bilateral Tornqvist price index. This index, ln $\tilde{P}_{ij}$, is defined by:

$$(3) \qquad \ln \tilde{P}_{ij} = \frac{1}{2} \Sigma_k (S_k^i + S_k^j)(\ln P_k^i - \ln P_k^j)$$

where i and j refer to adjoining time periods and S_k^i, is, as before, the share of total export revenue for observation i from commodity k. 7/ In Section 4 we rely on multilateral comparisons for Korean footwear exports aggregated over 14 footwear categories, 8/ and in Section 5 we carry out bilateral comparisons for a subset of countries with footwear exports disaggregated over 26 categories of footwear.

4. Multilateral Comparisons

We start with a comparison of unit value, unit price and unit quality indices for the seven countries purchasing Korean footwear. Due to the potential biases caused by missing values, we have been obliged to aggregate Korean footwear exports into 14 commodity categories. Details of aggregation and data preparation procedures are given in the appendix. Our fabricated commodity categories (see appendix) are distributed as follows (codes, followed by number of footwear categories in parenthesis): Rubber (6401,2); leather, including artificial (6402,10); wood and cork, gaiters, etc. (6403,1); parts (6405,1). 9/ Because the US VER with Korea extended over a 4 year period starting at mid-year, we annualized the quarterly data from mid-year to mid-year points. Thus our sample extends from 1974:3 to 1986:2 and an annual observation for, say, 1978 extends from 1977:3 to 1978:2.

Unit values appear in table 2, Tornqvist prices in table 3 and the quality index in table 4. Because all data are reported from July to June (e.g. data for 1975 is from July 1974 to June 1975), the restricted period corresponds to 1978, 1979, 1980 and 1981 and unrestricted data to all other years. Even at this level of disaggregation, unit values are relatively poor indicators of prices. For example, the ratio of the highest to lowest unit value index in 1986 is 1.96, whereas the corresponding Tornqvist price ratio is only 1.23, indicating that there were substantial differences in the product mix of the 14 commodity categories between countries.

Before looking for price and quality effects during the VERs, it is interesting to use the properties of the multilateral price and quality indices to check informally whether high priced (high quality) Korean shoes were destined to high income markets. For quality-adjusted price indices, the pattern is clear and as expected: the highest price bundle is destined to the highest-income country at the beginning of the period with a narrowing in the price gap through time as one would expect from a pattern of narrowing income differentials.

The quality index shows little systematic variation for any country except the US which shows strong upgrading effects. However, it occurs after the OMA period rather than within it.

How misleading unit value indices are as indicators of price changes is seen by comparing the difference in average growth of the unit value index for the US during the restricted and unrestricted years (2 percentage points), with the growth of the quality-adjusted price index for the same years in table 3. The unit value indices show small differences in average growth during the restricted and unrestricted periods whereas the quality-adjusted price index indicates a doubling of the growth rate

TABLE 2
UNIT VALUE INDICES (REL. TO US=1.0 IN 1977)

YEAR ENDING JUNE	JAPAN	EEC	UNITED KINGDOM	CANADA	USA	AUSTRALIA	REST OF WORLD
1975	0.52	0.48	0.47	0.48	0.66	0.41	0.55
1976	0.49	0.54	0.45	0.55	0.84	0.43	0.58
1977	0.57	0.67	0.54	0.72	1.00	0.51	0.76
1978	0.61	0.81	0.58	0.75	1.11	0.51	0.82
1979	0.71	0.96	0.86	0.96	1.31	0.73	0.82
1980	0.89	1.22	1.09	1.15	1.59	0.75	1.27
1981	0.96	1.21	1.15	1.22	1.60	1.13	1.48
1982	1.01	0.94	1.05	1.23	1.72	1.12	1.40
1983	1.09	0.97	0.89	1.28	1.66	1.00	1.17
1984	1.11	1.05	0.99	1.13	1.70	0.95	0.84
1985	1.20	1.06	1.03	1.31	1.89	1.08	0.90
1986	0.99	1.19	1.11	1.52	2.06	1.20	1.06

AVERAGE GROWTH RATES FOR RESTRICTED PERIOD (1978 TO 1981)

JAPAN	EEC	UK	CANADA	USA	AUS	REST
0.144	0.163	0.218	0.144	0.128	0.239	0.198

AVERAGE GROWTH RATES FOR 1975-76 AND 1982-86

JAPAN	EEC	UK	CANADA	USA	AUS	REST
0.023	0.057	0.022	0.102	0.105	0.046	0.015

AVERAGE GROWTH RATES FOR 1975-86

JAPAN	EEC	UK	CANADA	USA	AUS	REST
0.067	0.095	0.093	0.117	0.113	0.116	0.082

TABLE 3
TORNQVIST PRICE INDICES   (REL. TO US=1.0 IN 1977)

YEAR ENDING JUNE	JAPAN	EEC	UNITED KINGDOM	CANADA	USA	AUSTRALIA	REST OF WORLD
1975	0.63	0.57	0.57	0.55	0.70	0.56	0.60
1976	0.58	0.66	0.55	0.65	0.88	0.61	0.69
1977	0.63	0.77	0.59	0.79	1.00	0.75	0.78
1978	0.62	0.83	0.62	0.78	1.05	0.75	0.86
1979	0.76	1.04	0.93	1.05	1.29	1.00	1.00
1980	0.99	1.29	1.15	1.21	1.55	1.12	1.28
1981	1.02	1.36	1.23	1.28	1.59	1.32	1.45
1982	1.07	1.13	1.08	1.28	1.56	1.19	1.44
1983	1.15	1.03	0.91	1.17	1.37	1.16	1.22
1984	1.09	1.12	1.02	1.22	1.40	1.05	1.16
1985	1.20	1.16	1.12	1.34	1.46	1.25	1.22
1986	1.15	1.29	1.21	1.48	1.52	1.39	1.30

AVERAGE GROWTH RATES FOR RESTRICTED PERIOD (1978 TO 1981)

JAPAN	EEC	UK	CANADA	USA	AUS	REST
0.136	0.154	0.216	0.135	0.127	0.157	0.168

AVERAGE GROWTH RATES FOR 1975-76 AND 1982-86

JAPAN	EEC	UK	CANADA	USA	AUS	REST
0.020	0.044	0.008	0.078	0.051	0.057	0.030

AVERAGE GROWTH RATES FOR 1975-86

JAPAN	EEC	UK	CANADA	USA	AUS	REST
0.062	0.084	0.084	0.099	0.079	0.094	0.080

during the restricted period when compared with the unrestricted period. From equation (2), this small difference in unit value growth during the restricted years coupled with the large price increase implies much less upgrading during the restricted than during the unrestricted years (table 4). However, a look at the average growth rates of the Tornqvist price and quality indices across countries suggests that the expected price increase in the restricted markets (US and UK) was also significant elsewhere. Likewise, the slowdown in quality growth during the restricted period was not confined to the US.

To check further whether indeed price increases and quality decreases were significant during the restricted years, we regressed the price and quality indices in tables 3 and 4 on time and country dummies with separate dummy variables for the restricted periods for the US (1978-81) and the UK (1979-81). The results were (country and year dummies omitted):

(4) $p^* = 0.089$ DUS $+ 0.080$ DUK $\bar{R}^2 = 0.99$
         (1.93)   (1.57)   DOF $= 64$

(5) $Q = -0.12$ DUS $+ 0.01$ DUK $\bar{R}^2 = 0.99$
         (-2.43)   (0.27)   DOF $= 64$

The results from the price equation indicate a significant price rise for the US but not for the UK although a specification of (4) and (5) in natural logarithms (not reported here) gives a significant acceleration of price increase for the UK but not for the US. The results from the quality index regression also suggest a significant slowdown in quality growth for the US during the VER-period but no change for the UK. 10/ Thus the fixed-effect regressions further support the direct inferences drawn from tables

TABLE 4
QUALITY INDICES   (REL. TO US=1.0 IN 1977)

YEAR ENDING JUNE	JAPAN	EEC	UNITED KINGDOM	CANADA	USA	AUSTRALIA	REST OF WORLD
1975	0.83	0.84	0.83	0.86	0.94	0.73	0.93
1976	0.85	0.83	0.81	0.84	0.96	0.70	0.85
1977	0.90	0.87	0.92	0.91	1.00	0.69	0.97
1978	0.97	0.98	0.95	0.96	1.06	0.68	0.95
1979	0.93	0.92	0.93	0.91	1.02	0.73	0.82
1980	0.90	0.94	0.95	0.95	1.02	0.67	0.99
1981	0.94	0.89	0.93	0.95	1.00	0.86	1.02
1982	0.95	0.83	0.97	0.96	1.10	0.94	0.97
1983	0.94	0.94	0.97	1.09	1.21	0.86	0.96
1984	1.01	0.93	0.97	0.92	1.22	0.90	0.72
1985	1.00	0.92	0.92	0.98	1.29	0.86	0.73
1986	0.86	0.93	0.92	1.03	1.36	0.86	0.81

AVERAGE GROWTH RATES FOR RESTRICTED PERIOD (1978 TO 1981)

JAPAN	EEC	UK	CANADA	USA	AUS	REST
0.012	0.009	0.003	0.012	0.001	0.066	0.020

AVERAGE GROWTH RATES FOR 1975-76 AND 1982-86

JAPAN	EEC	UK	CANADA	USA	AUS	REST
0.002	0.012	0.014	0.022	0.053	-.008	-.019

AVERAGE GROWTH RATES FOR 1975-86

JAPAN	EEC	UK	CANADA	USA	AUS	REST
0.006	0.011	0.010	0.018	0.034	0.019	-.004

3 and 4, namely a significant price rise in the US when the VER was binding accompanied by a quality decline. It should be noted, however, that rubber products were not subject to a quota. Therefore, the quality index may be picking up substitution from covered to non-covered products (e.g. covered leather to noncovered rubber). To the extent that the VER was on higher-valued footwear, substitution towards non-covered items would show up in quality downgrading. In the next section, we look for further confirmation of this result by relying on more disaggregated bilateral comparisons.

5. Bilateral Comparisons

As pointed out in section 2, the detection of quality change is likely to be better the more disaggregated the commodity set since commodities are assumed to be homogeneous within each category. Our multilateral comparisons in section 4 were unavoidably restricted to fourteen commodity categories. As a corroboration of our earlier results, therefore, it is useful to conduct similar calculations on a data set with greater commodity disaggregation. A necessary corollary of further commodity disaggregation, however, is reduced country coverage and bilateral rather than multilateral comparisons. Our bilateral comparisons are for the USA, Japan and West Germany (FRG): the three countries with fewest missing observations. Furthermore, West Germany has the added attraction that, with the exception of EEC surveillance, which is generally held to have had little effect, she had no restrictions on footwear imports over our sample period.

We now analyze price and quality effects of VERs with bilateral indices. These indices are attractive because their weights are more relevant to the country under consideration, but at the expense of reducing

the degree of cross-country comparability. Our results with bilateral indices are directly comparable with those calculated by Aw and Roberts (1986) who calculated bilateral indices for Korean-US footwear trade using US import data.

The results of the bilateral calculations are summarized in table 5. Two commodity sets are reported: all footwear; 11/ and US-restricted commodities. The former classification contains 26 commodities, while the latter contains a subset of 21 of them. Average growth rates of price, quality and unit value indices are reported for the years of the US restrictions and the remainder of the sample period.

Several comparisons are possible for the data reported in table 5. Comparing the OMA and non-OMA periods for the US reveals a very considerable rise in the rate of price increases in the former period, but a decline in the rate of quality change. This is consistent with our previous finding. Further evidence of the effect of the OMA on the restricted footwear types may be gleaned by comparing the indices for the restricted and all-footwear commodity classifications. The difference between OMA and non-OMA price rises is larger for the restricted commodities, but the difference in quality growth is the same. The lower quality changes in the all-footwear classification suggest that while substitution has been occurring from cheaper to dearer footwear and more strongly in the restricted than in the unrestricted set, the process was not affected during the OMA period.

The interpretation of the US data becomes more complex once account is taken of the results for the FRG and Japan. They display stronger price rise differentials than the US and the FRG also reports some quality upgrading. Thus comparing across countries seems to suggest

Table 5: PRICE AND QUALITY CHANGES: BILATERAL INDICES

	Period a/	Tornqvist Price Index			Quality Index			Unit Value Index		
		US	JAP	FRG	US	JAP	FRG	US	JAP	FRG
Restricted b/ Commodities (21 Categories)	R	0.140 (0.134)	0.196 (0.141)	0.156 (0.163)	0.023 (0.053)	0.014 (0.031)	0.070 (0.049)	0.163 (0.187)	0.210 (0.173)	0.227 (0.212)
	U	0.010 (0.007)	0.048 (0.036)	0.025 (0.022)	0.068 (0.058)	-0.024 (0.008)	0.007 (0.017)	0.078 (0.065)	0.023 (0.044)	0.032 (0.039)
All Commodities c/ (26 categories)	R	0.121	0.147	0.122	0.014	0.001	0.033	0.134	0.149	0.155
	U	0.034	0.029	0.046	0.057	0.012	-0.027	0.092	0.040	0.019

Figures in parentheses are for 20 commodity categories (exclusion of outdoor shoes of artificial leather).

a/ U = unrestricted period 1975/7 TO 1977/6 and 1981/7 to 1986/6
   R = restricted period 1977/1 to 1981/6

b/ categories restricted by the US VER (see appendix for definitions)

c/ all categories excluding parts, wood and cork, gaiters (see appendix for definitions)

17

negative price effects of the OMA. In fact, such a conclusion is probably too extreme, for the figures in the top part of table 5 are strongly influenced by one particular commodity: outdoor sports shoes of artificial leather. Over the sample period the prices of Korean exports of these shoes to the USA, FRG and Japan grew fairly rapidly and by broadly similar amounts, and in each case displayed one year of very substantial increase (over 40%). Unfortunately, however, the years concerned differed -- 1976, 1978 and 1980 respectively, so that whereas for the US the spurt fell in the non-OMA period, for the others it fell in the OMA period. Moreover, these footwear are generally held to have benefited from a large shift in fashion in the late 1970s (jogging, etc.), so that the weight attached to the large price increase was 1% for the US but 9% and 51% for the FRG and Japan respectively. When the comparisons are made for 20 commodity categories excluding outdoors sports shoes of artificial leather (figures in parentheses in table 5), the differences between countries are considerably narrowed. The increase in the rate of US price increases in the OMA period exceeds that of Japan and equals that of Germany, while the decline in the rate of increase in quality in US falls both absolutely and relatively to the other countries.

Table 6 shows the considerable coherence between our results and those of Aw and Roberts (1986). They were able to distinguish seventy commodity categories in the US import data and so considered the two restricted sub-groups separately: non-athletic leather footwear (40% of relevant imports in 1976/77) and other footwear (60%). On price increases, the two studies both find average increases of around 12% to 13% per annum during the VER and of around 4% over the non-VER years. Our later data

Table 6: COMPARISON WITH AW AND ROBERTS (1986)

Rate of Increases in Price and Quality	Aw and Roberts a/		de Melo and Winters (1989)
	Non-Athletic Leather Footwear	Other Footwear	All Footwear Restricted by OMA b/
Prices			
1978 to 1981	.117	.132	.140 (.138)
1974-1977 and 1981-1982	.021	.058	.037 (.036)
1974-1977 and 1981-1986	--	--	.010 (.009)
Quality			
1978-1981	.055	.018	.023 (.014)
1974-1977 and 1981-1982	.024	.105	.102 (.094)
1975-1977 and 1981-1982	.021	-.011	.054 (.033)
1974-1977 and 1981-1986	--	--	.008 (.065)
Value Share			
1976/1977	.398	.602	1.00

a/ Calculations are for calendar years.

b/ Calculations are for July to June. Calendar-year calculations in parentheses.

suggest that even the non-VER increase is perhaps an overestimate of the underlying natural rate of change of footwear prices.

On quality, the two studies differ a little more, but not dramatically so. De Melo and Winters find relatively less upgrading during the VER than at other periods, while Aw and Roberts suggest the opposite, at least when the anomalous year 1974 is excluded. However, the upgrading findings are not particularly robust. Aw and Roberts have six observations of binding constraints: non-athletic leather footwear in 1978 and 1979, and other footwear in 1978, 79, 80 and 81. They find detectable upgrading in the first three cases and downgrading in the last three (other footwear during 1979-81). Moreover, their finding of upgrading coincides with the three observations with the largest price changes in their sample. This may be of significance because the commodity classification used by Aw and Roberts -- TSUSA -- classifies footwear by both type and price; thus some of the movement between TSUSA headings which is classified by Aw and Roberts as quality change merely involves movement between one price category to another, as "footwear, leather, work, welt, not over $2 per pair" to "footwear, leather, work, welt over $2 per pair, not over $5 per pair". 12/ This could, of course, still reflect improvements in quality, but it could also arise from VER-induced price rises with no change in nature at all. Our own data, while coarser in classification, are not subject to this problem, and thus might well be the more reliable indicators of quality as a result. 13/

Return now to table 5. Comparing the figures for all commodities with those for the restricted commodities alone, it appears that for Korean exports to the US, the growth of both prices and quality was greater for the restricted than for the unrestricted commodities while the VER was in

effect. During the unrestricted years, on the other hand, the prices of the unrestricted footwear appear to have grown faster. This again lends credence to the view that the VER caused some increase in the prices of the commodities it affected. There is no such indication for quality changes, however.

A final comparison is made in table 7. This looks at the increase in the quality-corrected price index for Korean exports to the USA, Japan and the FRG using US bilateral weights. The figures for Japan and the FRG reflect the price changes those countries faced during 1974-86, but with the relative importance of each commodity in the aggregate determined by its importance in the bundle of exports destined for the US. Thus while they are not appropriate for commenting on Korean exports to Japan and the FRG, they are proper comparators for the rate of incrase in the prices of exports to the US. The new figures for Japan are virtually identical to those in table 5 and thus corroborate our view that the US experienced unusually large price increases for restricted products during the VER. Those for the FRG, on the other hand, shift considerably and end up looking fairly similar to the US . data. This casts some doubt on the hypothesis that the US experienced exceptional price ris?s, although it must be admitted that this result probably owes something to the way in which missing values were constructed. The FRG had considerably more zero flows (80) than the US (4) or Japan (24). The notional price change for such a flow was equated to the change in the price of exports of the commodity concerned averaged over all destinations, an average in which the US usually figured very prominently. When FRG weights are used this does not matter much, because the price of zero trade flows receives approximately zero weight, but when US weights are used and the US data have influenced

Table 7: PRICE AND QUALITY CHANGES: BILATERAL INDICES
(Average Annual Growth Rates)
US Weights

	Period a/	Tornqvist d/ Price Index			Tornqvist Price Index e/		
		US	JAP	FRG	US	JAP	FRG
Restricted b/ Commodities	R	.138	.114	.150	.140	.172	.188
(21 Categories)	U	.009	.056	.018	.010	.039	-.030
All Commodities c/	R	.116	.130	.116	.121	.159	.162
(26 categories)	U	.033	.036	.052	.034	.013	.006

a/ U = unrestricted period 19
   R = restricted period

b/ categories restricted by the US OMA (see appendix for definitions)

c/ all categories excluding parts, wood and cork, gaiters (see appendix for definitions)

d/ Annual (calendar year)

e/ Quarter 3 - Quarter 2 year

some of the prices, then one must expect the FRG figures to be biased towards the US ones.

6. Conclusions

The application of index numbers to disaggregated Korean footwear exports during 1974-86 suggests that the period of binding VERs led to significant price increases, but not to the quality upgrading predicted by early theoretical analyses. The distinctive feature of our results is that, unlike virtually all previous empirical studies of VERs, they are derived from exporters', rather than from importers' data. Hence the results in this paper provide a more direct test of the reactions of exporting countries subject to VERs and to the theoretical analyses of quality upgrading which refer to the exporting countries behavior towards restricted markets. •

Our comparisons drawn from multilateral indices allowed us to show that, after adjusting for product and country mix changes, the price of Korean footwear exports to the US (and to a somewhat lesser extent to the UK) rose significantly in the years when the VERs were binding (i.e. when quotas were filled). These results confirm and extend earlier work by Aw and Roberts (1988) on US footwear imports, but are more pertinent to testing the price and quality effects of VERs insofar as disaggregated exporters data to different sources provide a better control for product differentiation (etc.) than equally disaggregated importers data from several sources. These results were further confirmed by more disaggregated bilateral calculations.

The multilateral results for product mix change suggest that the VERs were associated, if anything, with less quality upgrading during the

period of the VERs, a result also confirmed by bilateral comparisons. However, as noted in the introduction, quality downgrading in response to a VER is plausible if exporters have foreign exchange earnings objectives rather than profit maximization. Since the pattern of quality changes across markets did not appear to vary significantly during the VER period, it is also possible that adjustment costs were sufficient to prevent product mix change towards the restricted markets.

To conclude, the analysis in this paper confirms empirically that VER-type restrictions result in rents that accrue to the exporting country (some further rents may be realized by importers if importing is not a competitive activity). However, the evidence for Korean footwear exports does not suggest any quality upgrading as a direct consequence of VERs, as, for instance, in autos.

Footnotes

1/ Quotas in the MFA and in American dairy products are quite precisely defined whereas VERs on autos, steel and footwear have been negotiated on broader categories of products -- i.e. number of autos, number of pairs of leather shoes.

2/ With adjustment costs, profit maximizing firms will equate per unit rents after deducting adjustment costs. If effective, non-transferability of quota tickets (prevalent among ASEAN countries (see Hamilton, 1986) will preclude quality mix adjustment.

3/ Yoffie (1983) documents that Taiwanese and Korean negotiators for the footwear negotiations with the US were primarily concerned with minimization of foreign exchange earnings loss. As indicated by Bark and de Melo (1988), the allocation of quota tickets for Korean footwear (and other products subject to VERs) is consistent with Yoffie's observation.

4/ This section draws on Hamilton (1989).

5/ See Winters (1988). An import quota was imposed on Taiwan in August 1977 and was converted into a VER in January 1981; the VER with Korea was instituted in January 1979. In 1985 the British footwear industry let the VERs with Taiwan expire as it was manifestly over-shipped.

6/ West Germany, France, Italy, Netherlands. Other EC countries (e.g. Ireland) had bilateral restrictions.

7/ Expression (2) also holds for the bilateral index with $\ln \tilde{P}_{ij}$ instead of $\ln P^*_{ij}$.

8/ Aw and Roberts (1988) multilateral comparison used 13 commodity groups.

9/ At this level of aggregation, the number of missing observations (pairs of country-commodity flows with zero values) is reduced to 27 out of a total of 1,092 observations.

10/ We also tested whether individual dummies for each of the restricted years (for both the US and the UK) were significant as a group and found them not to be statistically significant. We also ran regressions including dummy variables for Canada during the restricted period, yielding no discernable effect of the NTM.

11/ We exclude rubber overshoes (6401.3), women's shoes of artificial leather (6402.26), shoes of wood and cork (6405.0), gaiters, spats, etc. (6406.0), all of which have very small and erratic exports, and parts (6405.0), for which upgrading is not an issue.

12/ In private communication, Aw and Roberts confirmed that their breakdowns were for broadly defined price categories (less than $2.50 per pair and over $2.50 per pair) which, to some extent, would minimize the possibility of measuring as quality upgrading, what is, in effect, a price rise induced by the quota.

13/ Our use of July to June data years allows us better to capture the effects of the OMA, which operated from July 1977 to June 1981. However, to compare with Aw and Roberts we repeated our calculations on calendar years. This made very little difference to our US results, and hence to table 5, but it did affect those for the FRG and Japan having the effect of increasing their rate of price increase over the restricted period. Aw and Roberts define their restriction as starting with 1978 data expressed relative to 1977 values.

Bibliography

Aw, B. and M. Roberts. 1986. "Estimating Quality Change in Quota Constrained Markets: The Case of US Footwear," Journal of International Economics, vol. 21, pp. 45-60.

Aw, B. and M. Roberts. 1987. "Price and Quality Level Comparisons for US Footwear Imports: An Application of Multilateral Index Numbers," in R. Feenstra, ed., Empirical Techniques in International Trade. Cambridge: MIT Press.

Bark, T. and J. de Melo. 1987. "Export Mix Adjustment to the Imposition of VERs: Alternative Allocation Schemes," Weltwirtschaftliches Archiv, Band 123, pp. 668-78.

Bark, T. and J. de Melo. 1988. "Export Quota Allocations, Export Earnings and Market Diversification," World Bank Economic Review, vol. 2, no. 3, pp. 341-8.

Caves, D.B., L. Christensen, and W. Diewert. 1982. "Multilateral Comparisons of Output, Input, and Productivity Using Superlative Index Numbers," Economic Journal, vol. 92, pp. 73-85.

Chang, E.T. 1984. "The Effects of Quantitative Controls on Imports of Footwear from Korea and Taiwan," University of Wisconsin, unpublished manuscript.

Falvey, R. 1979. "The Comparison of Trade Within Import-Restricted Categories," Journal of Political Economy, pp. 1142-65.

Hamilton, C. 1986. "ASEAN Systems for Allocation of Export Licenses Under VERs," in C. Findlay and R. Garnaut (eds.), The Political Economy of Manufacturing Protection: Experiences of ASEAN and Australia. Sydney, pp. 235-47.

Hamilton, C. 1989. "The Transient Nature of 'New' Protectionism: The Case of International Trade in Footwear," Weltwirtschaftliches Archiv, forthcoming.

Melo, J. de and P. Messerlin. 1988. "Price, Quality and Welfare Effects of European VERs on Japanese Autos," European Economic Review, vol. 32, pp. 1527-46.

Rodriguez, C. 1979. "The Quality of Import and the Differential Welfare Effects of Tariffs, Quotas, and Quality Controls as Protective Devices," Canadian Journal of Economics, vol. 12, no. 3, pp. 439-49.

Winters, L.A. 1988. "A Case Study of UK Footwear Trade Restraints," mimeo.

Yoffie, D. 1983. Power and Protectionism. Columbia University Press.

Appendix: 1/

The Korean Footwear Export Data

The data, kindly provided by Taeho Bark of the Korea Development Institute, was collected on a quarterly basis from Korean Customs data publications. The data was initially collected for the period 1970 to 1986 for 12 export destinations and a residual "rest of the world" (ROW) group. The data used in the main body of the paper was constructed by: (1) aggregating Panama, Norway, and Sweden into the ROW group and Italy, France, Netherlands, and Federal Republic of Germany into a category, unrestricted EEC; (2) annualizing the quarterly data flows.

Prior to annualizing the data, an examination of the decumulated data revealed a fairly large number of typographical errors (e.g. positive value flow and zero price or negative entries) which amounted to 5 percent of the observations. After resolving these and other data inconsistencies, many errors remained in the data for 1973 (and earlier years). Because the Koreans changed their data classification in 1973 (and again in 1977) we decided to drop the observations prior to 1974. In the reduced data set covering 1974 to 1986, about 3 percent of the observations remained suspicious after correction for obvious errors (e.g. a decline in magnitude of one of the variables from quarter to quarter accompanied by increases in the other two).

Next we used the standard Korean Trade classification (Revised 1977) and the original descriptions of the earlier classifications for 1973 and 1976 to obtain our own derived concordance (see Table A1) with 31

1/ We are extremely grateful to Paul Brenton for preparing the data set.

commodity groups. These data, when annualized, showed that Korean footwear exports are concentrated, in a relatively small number of commodity groups. Given the importance of zero entries in the multilateral indices, for the multilateral comparisons we aggregated the 31 commodity categories (new code column) to 14 categories (final code column). The 26 categories used in the bilateral comparisons are the 31 listed in the new code (table A2, column 3) less the 5 footwear categories listed in footnote 9.

Table A1:   AGGREGATION OF FINAL COMMODITY CLASSIFICATION

New Code	Final Code	Description
6401 **FOOTWEAR WITH OUTER SOLES AND UPPERS OF RUBBER OR ARTIFICIAL PLASTIC MATERIAL**		
1100	1100	Boots
2000 3000 4500 6700 9000	9999	Other
6402 **FOOTWEAR WITH OUTER SOLES OF LEATHER OR COMPOSITION LEATHER; FOOTWEAR (OTHER THAN IN 6401) WITH OUTER SOLES OF RUBBER OR ARTIFICIAL PLASTIC MATERIAL**		
Footwear with uppers of leather		
1100 1200 1300 1400 1500 1600	1000	Other specified
1700	1700	Outdoor sports shoes
1900	1900	Footwear n.e.s.
Footwear with uppers of artificial leather		
2100 2200 2300 2400 2500 2600	2222	Other specified
2700	2700	Outdoor sports shoes
2900	2900	Footwear n.e.s.

Table A1: AGGREGATION OF FINAL COMMODITY CLASSIFICATION (continued)

New Code	Final Code	Description
Footwear with uppers of fabric		
4100	4100	Shoes for work, jungle, mountaineering and similar laced boots
4200	4200	Indoor sports shoes
4900	4900	Other
Footwear with uppers of plastic and other footwear		
3000	9999	Footwear with uppers of plastic and other footwear

6403, 6404, 6406   FOOTWEAR WITH OUTER SOLES OF WOOD OR CORK OR OF OTHER MATERIALS AND GAJ.ERS, SPATS, ETC.

6403.0000	6403.9999	Footwear with outer soles of wood or cork of or other materials and
6404.0000		gaiters, spats, etc.
6406.000		

6405   PARTS OF FOOTWEAR

0000	0000	Parts of footwear

COUNTRY AGGREGATION

1. Japan
2. Unconstrained EEC -- France, W. Germany, Italy, Netherlands
3. Norway/Sweden
4. UK
5. Canada
6. USA
7. Australia
8. ROW -- Rest of World, Panama

The final code referred to above is that assigned to the aggregated commodity groups and is to be found on file for these data.

Table A2: CONCORDANCE BETWEEN THE 1973, 1976 AND 1977 REVISIONS
OF THE KOREAN TRADE CLASSIFICATION

73 Code	76 Code	77 Code	New Code	Description
6401 FOOTWEAR WITH OUTER SOLES AND UPPERS OF RUBBER OR ARTIFICIAL PLASTIC MATERIAL				
12	120	0200	1000	Boots 1/
15	130			
19	190			
20	200	0300	2000	Shoes 2/
80		0500		
30	300	0400	3000	Overshoes
40	430	0601	4500	Sandals and zori 3/
50	500	0602		
		0699		
60	600	0701	6700	Slippers 4/
70	700	0702		
		0799		
11	900	0100	9000	Footwear n.e.s. 5/
90		0800		
6402 FOOTWEAR WITH OUTER SOLES OF LEATHER OR COMPOSITION LEATHER; FOOTWEAR (OTHER THAN IN 6401) WITH OUTER SOLES OF RUBBER OR ARTIFICIAL PLATIC MATERIAL				
Footwear with uppers of leather				
11	110	0100	1100	Furskin boots
12	120	0102	1200	Walker, mountain shoes and similar lace boots
13	130	0103	1300	Women's boots
14	140	0104	1400	Men's (and boys?) boots 6/
15	150	0105	1500	Men's shoes
16	160	0106	1600	Women's shoes including high heels

Table A2: CONCORDANCE BETWEEN THE 1973, 1976 AND 1977 REVISIONS
OF THE KOREAN TRADE CLASSIFICATION (continued)

73 Code	76 Code	77 Code	New Code	Description
17	170	0107	1700	Outdoor sports shoes
19	190	0108 0110 0199	1900	Footwear n.e.s. 7/

Footwear with uppers of artificial leather

73 Code	76 Code	77 Code	New Code	Description
21	210	0201	2100	High (furskin?) boots 8/
22	220	0202	2200	Walker(?), mountain and similar lace boots 9/
23	230	0203	2300	Women's boots
24	240	0204	2400	Men's (and boys'?) boots 10/
25	250	0205	2500	Men's shoes
26	260	0206	2600	Women's shoes (inc. high heel)
27	270	0207	2700	Outdoor sports shoes
28	280	0208 0299	2900	Footwear n.e.s. 11/

Footwear with uppers of plastic

73 Code	76 Code	77 Code	New Code	Description
31	310	0300	3000	Footwear with uppers of plastic 12/
32	320			
33	330			
34	340			
36	350			
37	360			
39	390			

Table A2: CONCORDANCE BETWEEN THE 1973, 1976 AND 1977 REVISIONS
OF THE KOREAN TRADE CLASSIFICATION (continued)

73 Code	76 Code	77 Code	New Code	Description
Footwear with uppers of fabric				
41	410	0401	4100	Shoes for work, jungle, mountaineering and similar laced boots
42	420	0402	4200	Indoor sports shoes
43 47	430 470	0499	4900	Footwear n.e.s. 13/
Other footwear				
90	900	0500	9000	Other footwear
6403 FOOTWEAR WITH OUTER SOLES OF WOOD OR CORK				
10	100	0000	0000	Footwear with outer soles of woord or cork
6404 FOOTWEAR WITH OUTER SOLES OF OTHER MATERIALS				
00	000	0000	0000	Footwear with outer soles of other materials
6405 PARTS OF FOOTWEAR				
11	110	0101	0000	Parts of footwear
19	190	0102		
21	210	0103		
29	290	0104		
30	300	0199		
40	400	0200		
51	510	0300		
59	590	0400		
90	900	0500		
6406 GAITERS, SPATS, ETC.				
10 90	0000	0000	0000	Gaiters, spats, etc.

Table A2: CONCORDANCE BETWEEN THE 1973, 1976 AND 1977 REVISIONS
OF THE KOREAN TRADE CLASSIFICATION (continued)

Notes:

1/ In the notes to the 73 classification the descriptions of the groups
12, 15 and 19 all mention boots containing furskins, whilst for the
apparently identical groups in the 76 classification (120(1/2 boots),
130(ordinary boots) and 190(waders)) furskins are not mentioned. In
the 77 classification there is a group (0100) described as "footwear
containing furskins". The entrires in this group are very small or
zero, whilst the entries under 12, 13, and 19 in 73-75 and 120, 130,
and 190 in 76 are all relatively large. Thus we conclude that 12, 13,
19, in 73-75 are compatible with 120, 130 and 190 in 76. In the 77
classification there is only one apparently compatible group (0200)
entitled "boots". Thus we combine the three groups in the earlier
classifications. This leaves a problem with group 11 in 1973 which is
described as "high boots containing furskins" and group 0100,
described above, in the 77 classification.   In both cases the entries
are small or zero and so /e group them together with "other footwear"
(see below). It was deemed important to keep the "boots" group
separate since this type of footwear was excluded from the OMA
negotiated with the US in 1977.

2/ All three classifications contain a group entitled "shoes with soles
and uppers of rubber or plastic material" (20,200,0300) whilst the 73
and 77 classification show an additional group "rubber shoes". In
both cases the flows are very small or zero (and so all entries may
have been zero in 1976) and so we combine to obtain a single group
"shoes".

3/ In the 73 and 76 classifications sandals and zori are split into two
groups; "of rubber" (40,400) and "of plastic" (50,500). In the 77
classification in addition to these two groups (0601,0602) there is a
further group "of other" (0699).   We assume that the latter were
formerly classified in either of the two groups of sandals and zori,
and hence obtain a single group by combining all the relevant groups
of sandals and zori.

4/ The same issue as above applies to slippers.

5/ See note 1.

6/ The 73 and 76 classifications explicitly mention "mens and boys",
while the latter is excluded from the description of the 77 group.
Without further information we assume that the groups in the different
classifications are identical.

7/ In the 77 classification there are two additional groups not present
in the earlier classifications ("shoes for indoor sports" and "work
shoes"). We assume that such footwear was previously classified under
"footwear n.e.s."

Table A2:   CONCORDANCE BETWEEN THE 1973, 1976 AND 1977 REVISIONS
OF THE KOREAN TRADE CLASSIFICATION (continued)

8/   The description of this group in the 77 classifiction simply reads
"furskin boots" whilst in the earlier classification it is described
as "high boots".   There are no other possible matches for the 77
group.

9/   The description of the 77 group omits "walkers" which do not reappear
elsewhere in the classification.   We assume that if flows of such
footwear are positive after 1977 they are classified to this group are
not to "footwear n.e.s.".

10/   As in note 6 above.

11/   The 77 classification contains an additional group "shoes for indoor
sports" which cannot be matched to any of the groups in the earlier
classifications.   We assume that such footwear was previously
classified under "footwear n.e.s.".

12/   The 77 classification allows for only one group of plastic footwear,
while in the earlier classifications there are seven.   This appears to
reflect the very small flows of such footwear.   Hence we are obliged
to sum the more detailed groups in the 73 and 76 classifications.

13/   The 73 and 76 classifications include a group "shoes with uppers of
canvas" which is not present in the 77 classification.   Hence we
assume that such footwear is now classified under "footwear n.e.s.".

The new Code referred to above is the code we assign to groups
following concordance.

	Title	Author	Date	Contact
WPS194	Efficient Debt Reduction	Jeffrey Sachs	May 1989	L. Chavarria 33730
WPS195	How Has the Debt Crisis Affected Commercial Banks?	Harry Huizinga	May 1989	L. Chavarria 33730
WPS196	A Review of Alternative Debt Strategies	Eugene L. Versluysen	May 1989	E. Hadjigeorgalis 33729
WPS197	Differentiating Cyclical and Long-Term Income Elasticities of Import Demand	Fernando Clavijo Riccardo Faini	May 1989	K. Cabana 61539
WPS198	Equity in Unequal Deductions: Implications of Income Tax Rules in Ghana and Nigeria	Chad Leechor Robert Warner	May 1989	A. Bhalla 60359
WPS199	Private Sector Assessment: A Pilot Exercise in Ghana	Samuel Paul	May 1989	E. Madrona 61712
WPS200	Women and Development: Objectives, Framework, and Policy Interventions	T. Paul Schultz	April 1989	J. Klous 33745
WPS201				
WPS202	A Cross-Section Analysis of Financial Policies, Efficiency and Growth	Alan H. Gelb		
WPS203	Optimal Commodity Taxes in the Presence of Rationing	Nanak Kakwani Ranjan Ray		
WPS204	The Impact of Labor Costs on Manufactured Exports in Developing Countries: An Econometric Analysis	Luis Riveros	May 1989	R. Luz 61762
WPS205	What Determines National Saving? A Case Study of Korea and the Philippines	Sang-Woo Nam	May 1989.	R. Luz 61762

	Title	Author	Date	Contact
WPS206	The Effects of Single-Sex Schooling on Student Achievement and Attitudes in Nigeria	Valerie E. Lee Marlaine E. Lockheed	May 1989	C. Cristobal 33640
WPS207	Occupational Training Among Peruvian Men: Does It Make a Difference	Ana-Maria Arriagda	May 1989	C. Cristobal 33640
WPS208	Effective Primary Level Science Teaching in the Philippines	Marlaine E. Lockheed Josefina Fonacier Leonard J. Bianchi	May 1989	C. Cristobal 33640
WPS209	Can the Industrial Countries Return to Rapid Growth? Space Seminar	International Economics Department and International Economic Analysis and Prospects Division		
WPS210	Notes on Cash-Flow Taxation	Roger H. Gordon		
WPS211	Coffee Pricing Policies in the Dominican Republic	Panos Varangis	May 1989	D. Gustafson 33714
WPS212	Beyond the Debt Crisis: Alternative Forms of Financing	Lessard		
WPS213	Conditionality and Debt Relief	Stijn Claessens Ishac Diwan		
WPS214	Macroeconomic Adjustment and Labor Market Response: A Review of the Recent Experience in LDCs	Peter R. Fallon Luis A. Riveros		
WPS215	Adjustment and Income Distribution: A Counterfactual Analysis	Francois Bourguignon William H. Branson Jaime de Melo	May 1989	M. Ameal 61466
WPS216	Price and Quality Effects of Vers--Revisited: A Case Study of Korean Footwear Exports	Jaime de Melo L. Alan Winters	June 1989	M. Ameal 61466