A minerals data analysis report
DECEMBER 1983

DEVELOPMENT OF FOREIGN ECONOMIC INDICES

Phase I for
JORDAN

Contract J0225001
Phoenix Associates. Inc.

Bureau of Mines Open File Report 161-84

BUREAU OF MINES
UNITED STATES DEPARTMENT OF THE INTERIOR

DISCLAIMER

FOREWORD

This report was prepared by Phoenix Associates, Inc.,
Bethesda, Maryland, under USBM Contract number J0225001.
The contract was initiated under the ·Minerals Availability
Program. It was administered under the technical direction
of the Division of Minerals Availability with Paul R.
Thomas acting as Technical Project Officer. Darlene Wilson
was the contract administrator for the Bureau of Mines.
This report is a summary of the work recently completed as
a part of this contract for the period August 1982 to the
date of this report's submission, December 7, 1983.

It should be noted that no patented material is contained
within this volume.

ACKNOWLEDGEMENTS

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(continued)

A. INTRODUCTION TO THE COUNTRY DOCUMENTATION REPORTS

1. Overview

This document is a Country Documentation Report. It covers the procedures used and end products provided by PHOENIX ASSOCIATES, INC. in creating twelve index time series describing factor input costs in the mining sector of a specific country. Indices cover the period 1970 through 1981 and represent work carried out under Phase I of the contract. Some of the earlier Country Documentation Reports (done during the "R&D" period of Phase I) contain indices back to 1965. The second stage of this contract, Phase II, will concentrate on extending these index series to 1983 while also, where feasible, improving the reliability of the already reported index time series' observations.

Each report includes, in addition to this Introduction, a Theoretical Notes section, a Notation Summary, a Technical Discussion, and a set of Appendices. Below, we discuss the contents of these sections as well as how they may be best utilized.

2. Theoretical Notes Description

Many countries contain similar data deficiencies among their mining factor costs. In addition, index construction techniques that are superior for one index will tend to be superior for others. Therefore, in order to minimize the repetition of index construction descriptions in Section D of each report, the basic and often used methodologies are outlined once in the front of each report in Section B.

3. Notation Summary Description

This section is in tabular form and indicates the various notational conventions utilized throughout these reports. Abbreviations are used as sparingly as possible with the sole intention of increasing clarity.

4. Technical Discussion Description

This section is composed of 13 subsections: one for each index and one for the exchange rate. Each subsection discusses in a step-by-step fashion how each observation

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of the particular index being considered was constructed
or forecast. This is accomplished through referencing
the three appendices and by conveying not only the exact
(and hence reproducible) methodology for the index's
construction, but also by providing the analyst a feeling
for the primary data and country environment itself.
Explanations are further enhanced by interspersing
throughout these analyses, graphs, which are referenced in
the body of the text. Besides clarifying the text, these
graphs assist the reader in drawing his own conclusions.

5. Appendix Description

There are three appendices in each Country Documentation
Report. Appendix 1 and Appendix 3 contain data. These
data are preceded by a record of Missing Value
designations, which are generally set equal to zero. Thus,
whenever this value is found in the corresponding field,
the observation for that field is "missing", i.e., not
available. As an example, if a '0' is designated as a
Missing Value for field 16 at the top of each printout,
then a '0' found in the 1978 position for field 16
indicates that the 1978 observation is missing, or not
available.

Appendix 1 contains the actual project deliverable, i.e.,
the Phase I indices for the country being studied. The
field number above the index label in this appendix, will
correspond to the section number in the Technical
Discussion (that discusses the index) plus 4. For example,
the Mining Wage Index is index number 5 in Appendix 1 and
in section 1 in the Technical Discussion.

Appendix 2 contains the report's documentation. It gives
an exhaustive description of the data sources used in
computing the indices. Each data source is also referred
to by a "DS" or Data Source number. The purpose of this is
twofold. First, it allows easy reference to the data
sources themselves while reading the Technical Discussion.
Secondly, it facilitates relating the record and field
location of the primary data values (see Appendix 3
discussion below) to their data source identification
descriptions.

Appendix 3 contains the primary data referenced in the
Technical Description section and in Appendix 2. There is
a one-way order to using this appendix. To examine the
raw data of a particular DS number mentioned in the text,

one first looks up the DS number in Appendix 2, locating
its corresponding Data Documentation Sheet. From this
sheet, one gets the field number and record set for the
data in question. The field number in the record print-
out of Appendix 3 is located at the top of each page.
The record set number is found in the field whose label
is RECORDSET. To locate a particular observation's value,
one first locates that group of records with the appro-
priate record set number and then one goes on to find
(in the field called YEAR) the year of the observation
in question. This locates the record with the desired
observation. The variable's value would then be found
in this record under the appropriate field number. In
a sense, the field number and record set number act as
coordinates that allow the user to locate the column and
rows containing the particular data utilized in the text
and described in the Data Source Documentation Sheets.

6. A Word of Warning

As a final word, though extreme care was given to providing
the Bureau of Mines the best actual and estimated indices
possible considering the project constraints, three points
should be kept in mind.

First, an index measures a concept, not a physical entity
that actually exists. As such, the question of VALIDITY
must be remembered. The validity of the index refers to
the closeness with which the index approximates the concept
that the user has in mind and wishes to "measure". Phoenix
has attempted to ensure index validity by employing an
appropriate single standard set of concepts (one for each
index category) across all countries. Table A.1 contains
this chosen set of concepts. In this way, the constructed
index numbers will both properly reflect the Bureau's
end-use needs (especially vis-a-vis their in-house models)
as well as provide greater possible consistency for
inter-country comparisons.

Nonetheless, other end-users should be careful not to take
these index series out of the context of their maintained
hypotheses, i.e., the assumptions on which inductive and
deductive analyses rest. In this case, the maintained
hypotheses, in fact, include not just the construction
methodologies and the index conceptual definitions, but
also all the assumptions and methodologies the reporting
agency used in their publishing of the primary data. It
must be recognized that statistical reporting and compiling
techniques, time period coverage, and concepts embodied in

Table A.1: Concept Definitions Used in Index Construction

Index Category	Concept Definition
Mining Wage	Mine and plant labor; includes skilled, un-skilled, local and expatriate labor along with a measure of burden (payroll taxes, retirement funds, vacation, insurance, etc.) where possible
Construction Wage	Includes all labor (see mining wage, above, for inclusions) employed in the construction of mines and mill plants
Equipment and Repair Parts	Equipment and repair parts relevant to mining and milling operations and related infrastructure, e.g., front end loaders, shovels, Load Haul Dumps, trucks, trains, jumbo drills, as well as crushers, grinding mills, flotation cells, thickeners, dyers, etc.
Bits and Related Steel	Related steel for mining and milling such as drill bits, pipe, fan liners, track, shovel and loader teeth and liners, etc. as well as replacement parts such as steel balls, rods, shell and head liners, scoop lips, etc.
Timber and Lumber	Timber and lumber which is relatively most readily available in applications such as cribbing, lagging, and supports in underground mining
Fuel	Defined fuel products weighted toward diesel
Explosives	All types of blasting supplies, e.g., propellent powders, blasting caps, etc.
Tires and Rubber	All types of tires applicable to mining operations, e.g., for Load Haul Dumps, trucks, as well as other parts made of rubber, e.g., conveyer or other "belts" for machinery

Table A.1: Concept Definitions Used in Index Construction
         (continued)

Index Category	Concept Definition
Construction Materials	Materials such as sand, gravel, cement, limestone, reinforcing rods, steel, fasteners, etc. for use in construction of mine and mill plants and related infrastructure
Industrial Materials	Mining and milling chemicals used in daily operations, e.g., wetting agents, mining reagents, dust depresents, flocullents, etc.
Transportation	measures transport cost based upon an assessment of the country's normal freight transport network relevant to the mineral industry and could include, besides rail and truck, means such as barge and pipeline
Electric Power	Standard cost per kilowatt-hour for industrial users
Exchange Rate	National currency per United States dollar (unless otherwise specified)

their indexation, vary from country to country. Hence,
index construction often requires idiosyncratic adjustments
index by index and country by country so that the series
can best reflect the Bureau's models' needs.

This is not to say that using these indices appropriately
requires exhaustive research into their construction. What
should be inferred, however, is that utilizing these
indices in the most valid way requires, at the very least,
an awareness of the types of data used in each index's
construction since proxies appropriate to the Bureau's uses
may be grossly inappropriate for someone else's. One of
the purposes of the Technical Discussion, therefore, is to
help an end-user assess index validity for his own index
application. This is accomplished by

o indicating the rationale for the choice of each primary
  data time series used to construct an index

o providing the methodologies used to convert the primary
  data into the requisite index

Secondly, there is the question of RELIABILITY. In brief,
the reliability of an index concerns the extent to which
the measuring procedure yields the same results on repeated
trials. As Carmines and Zeller state in their book
'Reliability and Validity Assessment', "(t)he goal of
error-free measurement - while laudable - is never attained
in any area of scientific investigation". This issue must
be addressed once the questions of validity have been
satisfied. The Foreign Economic Indices presented herein
are in a sense statistical indices. Moreover, they are
based on conditional probabilities, i.e., conditional upon
the information available at the time of index construction
and the maintained hypotheses used in forecasting missing
primary data or indices themselves. What this means is
that the index observations (especially the forecasted
ones) should, if they could be compared to the true (zero
measurement error) values, fall within a certain range of
these "true" values. The expectation of these errors (an
error being the reported minus true value) should be
roughly equal to zero while the variance of these errors
should be acceptable. As such, one should not take the
indices as engraved in stone.

Compound these facts with the general lower quality of
lesser developed country data - not to mention the great
lags in their reporting - and one is forced to arrive at
the conclusion that uncertainty will exist in any given
observation for an index. What can be said is that the
index series at the time of construction, reflects the best

data available and that the documentation contained in this report will allow an analyst to decide for himself if an index is appropriate for his particular needs.

Lastly, a word of warning should be directed at those who will inevitably try to make cross-country comparisons utilizing these indices. Cross-country comparisons are intrinsically dangerous albeit often necessary undertakings. Often, however, one can minimize drawing spurious conclusions by following certain guidelines. Two guidelines are suggested below.

One such guideline is to always work with figures denominated in the currency facing the decision maker whose behavior is under investigation. As an illustrative example of how ignoring this rule can lead to trouble, consider a cost study which wishes to compare the growth of prices over time for a particular mining input in two countries.

Let P1 and P2 be the prices and R1 and R2 be the exchange rates (in dollars per local currency) in country 1 and country 2, respectively. Finally, let t=0 be the base period. Let us assume the cost study converts all costs to U.S. dollars for its comparison and reaches the conclusion

$$I1\$(t) = [P1(t)*R1(t)]/[P1(0)*R1(0)]$$

$$> [P2(t)*R2(t)]/[P2(0)*R2(0)]$$

$$= I2\$(t)$$

or,

$$I1\$(t) > I2\$(t)$$

for some $t > 0$. Does this mean that the decision makers in each country see country 2 having a lower price? In fact, it is easy to select values of R1(t)/R1(0) and R2(t)/R2(0) such that the following could simultaneously hold in local currencies (I1 and I2 being local currency-based indices):

$$I1(t) < I2(t)$$

for some $t > 0$. (Note that at $t = 0$, under either currency valuation, the indices are equal, i.e., $I1\$(0) = I2\$(0)$ and $I1(0) = I2(0)$.) This paradoxical result means that graphing these two index pairs would yield I1$ above I2$ at time t and I1 below I2 at the same time t.

This simple example may serve to point out the dangers of cross-country comparisons. Needless to say, P1 and P2 could have been the prices of labor (i.e., a wage) in each country. The only way around these sort of problems is to make certain that the appropriate economic theory (as opposed to pure engineering intuition) is applied in cases where cross-country comparisons are required to be made.

Another useful guideline is to always compare the index construction methodologies of each country for the index considered in the comparison. As an illustrative example of how ignoring this rule may lead to trouble, consider again country 1 and country 2.

Assume that each country's wages for skilled and unskilled labor (not just their indices) are the same in the base year. Assume further that country 1, in mining diamonds, uses 80% skilled labor and 20% unskilled labor whereas country 2, in mining bauxite, uses 80% unskilled labor and 20% skilled labor. It can then be shown under just about any reasonable indexation scheme, that should the wage of skilled labor increase in both countries by exactly the same amount between the base year and year t, then the mining wage index in country 1 will increase by more than the mining wage index in country 2 in year t. Therefore, comparing the mining wage index in year t for each country without examining their respective construction differences, one would assume that the mining wages in country 1 were higher than in country 2. By assumption, we know this would be an erroneous conclusion. Spurious conclusions such as this are a manifestation of the Aggregation Problem found in economics.

B. THEORETICAL NOTES

Note 1: Use of the CPI in Wage Approximations

Often the use of a CPI will be invoked in the estimation of
a wage index. The rationale behind this is explained here
and involves conceptually the following model.

In general, one can think of the determination of a price
(in this case the price of labor, the wage) as being the
result of supply factors, demand factors and external
factors (such as a government). Although the government
can override the (at least short-run) influences of supply
and demand, they may not ignore them indefinitely. In
economic theory, we call this imaginary price (i.e. the
one as a result of freely playing supply and demand
factors) the shadow price. The shadow price in our
conceptual model is determined from solving implicitly, the
following equations

$$Ld(t) = f[L(t-1),p(t),p(t-1)...,X(t),X(t-1),M(t),M(t-1),W(t)]$$

$$Ls(t) = g[LF(t),W(t),G(t),CPI(t)]$$

$$Ld(t) = Ls(t) =d L(t)$$

where

Ld : demand for labor by firms in this particular labor
     market
Ls : supply of labor to this particular labor market
f,g : unspecified functions
 L : actual amount of labor employed in the sector
 p : a price index of those firms' output competing in this
     labor market
 X : output index of those firms' competing in this labor
     market
LF : total labor force
 G : government spending on welfare and/or food subsidies
 W : the wage to be determined
 M : cost index of all non-wage input costs to the firm in
     this labor market

To describe the observed wage rate, Wob(t), we must add the
third factor, the external factor yielding

$$Wob(t) = z[W(t)]$$

where at best, z must be considered a long run function and at worst simply a relation (i.e. neither a one-to-one nor an onto mapping).

From this conceptual framework, a single labor market wage rate equation can be approximated, therefore, as

$$A(L)[Iw(t)] = B(L)[CPI(t)]$$

where Iw is a wage index and A(L) and B(L) are functions of lag operators. One example might be

$$Iw(t) - Iw(t-1) = h[CPI(t)-CPI(t-1)]$$

where h[.] is some linear function.

The idea here is that when compared to changes in the CPI, other variables are not significant to the same order of magnitude. The behavioral motivation therefore of this final 'reduced form' equation is that the market (with or without external involvement) seeks to maintain over time a relationship between the wage rate and the standard of living, as proxied by the CPI. This could also be interpreted as the workers attempting to maintain their real wages in the face of a depreciating currency.

Note 2: Constructing Unit Values

As one attempts to construct data for developing countries, one is faced with the necessity of using trade data to construct unit values as price proxies. A unit value is the value of a given trade category per unit traded. In practice its construction requires dividing the total expenditure on a given trade category (i.e. SITC) by a quantity index, usually referred to as a quantum. These quantums are typically created by aggregating dissimiliar physical objects by some physical unit, e.g. weight, area, volume.

Hence, where the text indicates that two time series were used in the construction of a unit value series, the following calculation was done for each observation

$$UV(t) = V(t)/Q(t)$$

where UV is an import (export) unit value, V is the total value of imports (exports), and Q (often called a quantum) is an index of the total quantity of imports (exports), respectively.

There is a hazard, however, in using unit values indiscriminately. It is possible that an index so constructed may contain the "Unit Value" bias. This bias, in fact, is related to the famous Aggregation Problem in Economics, as well as the problems in indexation in general. The bias itself, though, can be viewed as coming from two sources: weight mis-specification, and aggregation validity.

A unit value is a ratio of two numbers, each of which is itself a linear combination of item categories. The coefficients of these items (i.e., the weights) are assumed to be fixed throughout the period for which the unit value series is constructed. However, in reality, these weights vary through time. This can unintentionally bias a unit value series as a price proxy. For example, the denominator of an equipment and repair parts unit value might be the weighted sum (say by physical weight) of the number of pieces of smeltor, separator, and boring equipment for each of two different types (say small and large scale varieties). Over time, it is possible that more large scale pieces are purchased but as technology changes, large scale equipment becomes lighter (physically). This would tend to attenuate the (true) increase in the quantity of machinery purchased hence biasing the unit value upward by inflating the ratio.

The second source of the unit value bias is equally difficult to control. Since a unit value is the ratio of a number of products, it is possible for the unit value to excessively reflect goods in a given category (in this case an SITC) that are less important (or worse, irrelevant) vis-a-vis the concept being measured. An example of this would be if the above equipment and repair parts unit value contained metal cutting or moulding equipment. If for a given year, no prices in fact changed but a large amount of moulding equipment was imported, then depending on the relative price of moulding equipment versus mining equipment, the unit value would rise or fall.

In reality, both of these sources of bias exist to a greater or lesser extent and often in mixed and not explicitly separable way. But, as the above examples suggest, there are ways to minimize such errors. Specific methodologies that minimize the unit value bias are described in the Technical Discussion whenever unit values are used for index construction. Qualitatively, these techniques center around careful selection of data components for an index with an awareness of what has been aggregated (by the reporting agency) into each component.

Note 3: Index Updating Using Domestic and Foreign Price Indexes
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Here the question is, "How can an index for period t+1 be
computed, given its value at time t is known, and given it
is influenced by both domestic and foreign price changes?".
In what follows a simple solution to this question is set
forth.

Let commodity 1 be the good to be indexed. Assume its
price is affected by a composite commodity 2 of domestic
origin, and a composite good 3 of foreign origin. Let
$P(i,t)$ be the price of good i in period t. Let

$$I(i,t) =d P(i,t)/P(i,1975)$$

be the base 1975 index for good i in period t. Let 'a',
$0<a<1$, be the relative importance of the domestic composite
good (good 2) in influencing price changes in good 1. By
definition, 1-a will be the relative importance of the
foreign composite good (good 3) in influencing price
changes in good 1. Finally, let p be the percentage change
of good 1 from period t to period t+1.

This allows the following derivation:

$$\frac{P(1,t+1)}{P(1,1975)} = \frac{P(1,t) * (1 + p)}{P(1,1975)}$$

We then hypothesize the following approximation to p:

$$p = a * \left[\frac{P(2,t+1) - P(2,t)}{P(2,t)} \right] + (1-a) * \left[\frac{P(3,t+1) - P(3,t)}{P(3,t)} \right]$$

If we multiply both numerators and denominators by their
respective $P(i,1975)$ value and rearrange terms, we can
reduce this expression to

$$p = a*[I(2,t+1)/I(2,t) - 1] + (1-a)*[I(3,t+1)/I(3,t) - 1]$$

or

$$p = a*I(2,t+1)/I(2,t) + (1-a)*I(3,t+1)/I(3,t) - 1$$

Substituting this last equation into the first equation of
this section, we arrive at

I(1,t+1) = I(1,t) * [a*I(2,t+1)/I(2,t) + (1-a)*I(3,t+1)/I(3,t)]

There is only one adjustment that must be made to this
equation. I(3,t) is a U.S. dollar denominated index.
Therefore, it must be converted into an index of the
currency of I(1,t). Let R(t) be the local currency per
U.S. dollar exchange rate. We thus have to multiply the
last term in the parentheses of the right-hand-side of the
above equation by

$$\frac{R(t+1)/R(1975)}{R(t)/R(1975)} = R(t+1)/R(t)$$

This yields

$$I(1,t+1) = I(1,t) * [a*\frac{I(2,t+1)}{I(2,t)} + (1-a)*\frac{I(3,t+1)*R(t+1)}{I(3,t)*R(t)}]$$

This equation provides the answer to the original question,
for by hypothesis, each right-hand-side variable is known,
and I(1,t+1) was what we wished to determine.

C. NOTATION SUMMARY

Notation	Description
===	===
P[.]	The quantity or variable within the square brackets is a predicted value. Read as, "the predicted value of ... "
^	Used on some graphs to indicate a plotted point which has been predicted or constructed from estimated data; also used to indicate an exponent, eg. x^2 as x squared
(i) (see graphs)	In either legends or titles of graphs, a bracketed small print integer will often be seen. If so, it will also appear just above the abcissa axis to indicate that the dependent variable's value corresponding to this value of the independent variable has been estimated.
1.2345 (0.32) (regressions)	Bracketed quantity underneath an estimated regression coefficient is the standard error of the coefficient
e(t) (regressions)	Found in a number of equations in the text and is used to denote a stochastic error term - usually assumed to benormally distributed with a zero mean and homoskedastic unless otherwise stated
SITC xyz.wv	Standard International Trade Classification of the United Nations Statistical Office; the number of digits in the number to the right of this abbreviation indicate the level of disaggregation. For example, xy might be rubber products, xyz.w might be tires, and xyz.wv might be truck tires made of rubber
WPI, PPI	Wholesale Price Index, Producer Price Index
CPI	Consumer Price Index
X(t)	The value of variable X at time t

Notation	Description
==========	=============
I..	The symbol for an index identified by '..'; as an example, Icw might be the construction wage index
=d	Used in an identity not an equation; this can be read as, "is defined as"
(TN-i)	This refers to Note i in the Theoretical Notes
DS-x.y	This code indicates the 'y'th primary data source utilized in the Technical Discussion of index 'x'; its description can be found on Documentation Sheet x.y in Appendix 2
PC[.]	The percentage change of the quantity inside brackets
FI[P..,x,Tb]	The "Index Function" which takes time series P.., divides each observation by x, which is the value of P..(Tb), and multiplies each observation by 100. Tb is the base year of the newly created index.
t = 1982.Q or 1982.MM	Quarterly data for any year (here 1982) is denoted by Q = 1,2,3,4; monthly data for any year (here 1982) is denoted by MM = 01,02,...12
T(t)=T(t;x,y)	This function maps the first value of t onto the value x, an integer, the nth value of t onto x+(n*y) where y also is an integer
I..(t') =d K[P..(t),f], t = [T1,T2]	Creates a non-overlapping moving average, I.., subscripted by t' (not equal to t) from the series P..; each I.. is an equi-weighted arithmetic average of f adjacent observations of P.., P..(t) through P..(t+f). (Note: there will be (T2-T1+1)/f observations of t'.)
B^k[X(t)]	This is the "backwards" operator; for any variable, X(t), it yields the series X(t-k).

D. TECHNICAL DISCUSSION

1. Mining Wage Index Construction Methodology

This index was constructed from a series of daily wages in mining for 1973-1980. Series of the number employed and total wages and salaries in mining for 1971, 1974-1980 were available. An index of the average wagebill per mining employee constructed from these two series was used in estimating the 1971 mining wage index number. The mining wage index appeared to be highly correlated with the CPI. Two regression equations with the CPI as the explanatory variable were estimated for use in predicting the 1970, 1972 and 1981 mining wage index numbers. DS-1.1 contains mining wages for 1973-1980. For 1971 and 1974-1980, DS-1.2 and DS-1.3 contain, for a sample of mining operations, total mining salaries and wages and number of mining employees, respectively. The CPI for 1970-1981 resides in DS-1.4.

Step 1: Constructing and Comparing the Mining Wage and the Average Wagebill per Mining Employee Indices

1977-based indices of the DS-1.1 mining wage and the average wagebill per mining employee were initially constructed in order to facilitate the comparison of these two series during the first half of the 1970's. The 1977-based index was constructed from the DS-1.1 mining wage series as follows:

$$Imw77 =d FI[DS-1.1, 2.94, 1977].$$

A series of the average wagebill per mining employee, which will be referred to as AWB, was constructed by dividing total wages and salaries from DS-1.2 by the corresponding number of employees from DS-1.3. Then the 1977-based index was constructed:

$$Iawb77 =d FI[AWB, 1.118, 1977].$$

Iawb77 and Imw77 are compared in Graph 1.1. This graph suggests that Iawb77 may contain some unit value bias but it also suggests a general similarity in trend over time of Iawb77 and Imw77. Although year-to-year percentage changes of the two series are generally not the same, it appears from this graph that the percentage change of AWB over a longer period of time such as 1971-1974 would be a reasonable approximation for the percentage change of the

COMPARISON OF TWO 1977-BASED
MINING WAGE INDICES

x : Iawb77
o : P[Imw77]
— : Imw77
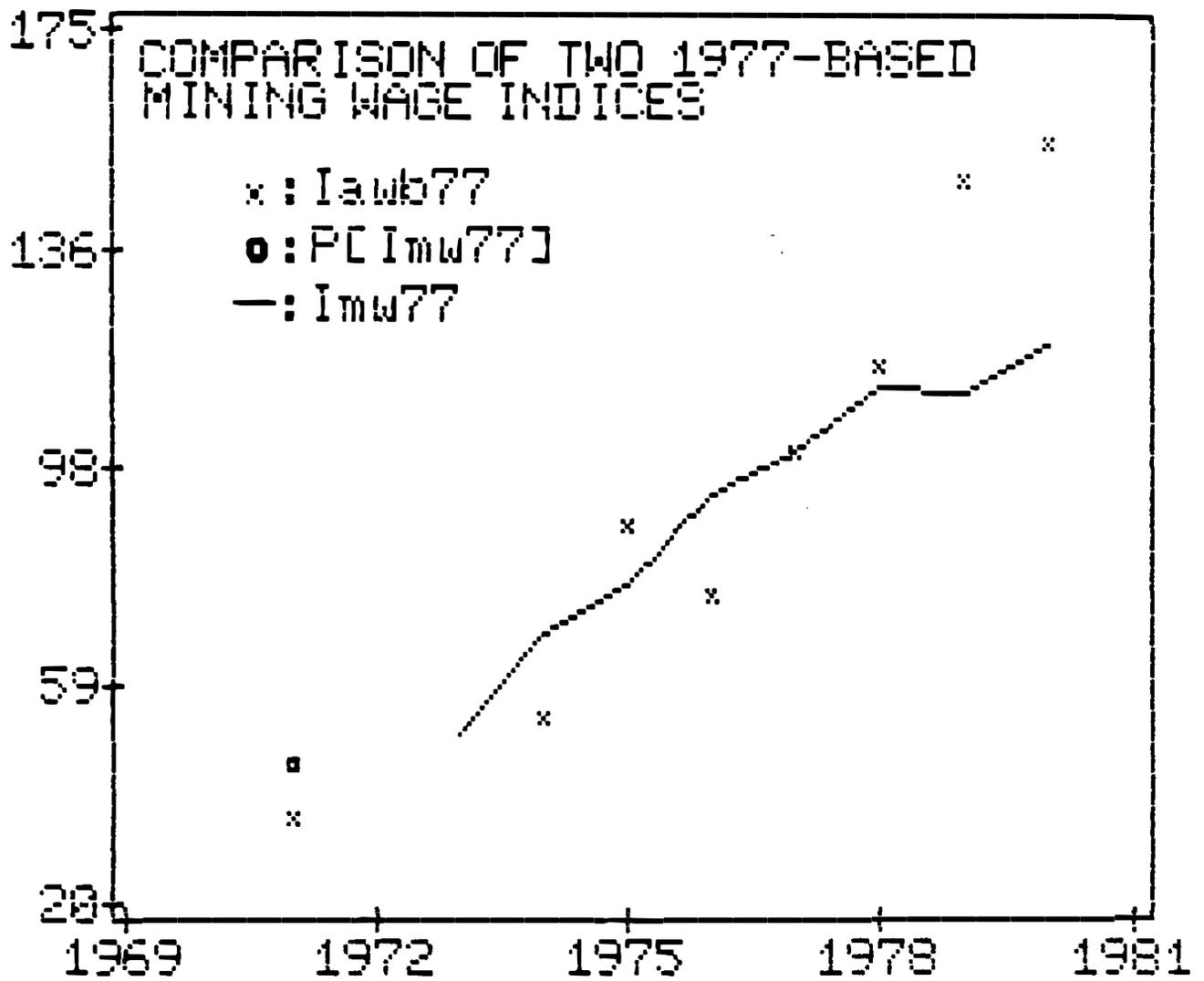
GRAPH 1.1: For the Mining Wage Index

DS-1.1 mining wage from 1971-1974. Thus Imw77 was
estimated as:

$$P[Imw77(1971)] = Imw77(1974) / [Iawb77(1974) / Iawb(1971)]$$

$$= 68.027 / (53.441 / 34.704)$$

$$= 44.175.$$

P[Imw77(1971)] is compared with the other observations of
Imw77 and with Iawb77 in Graph 1.1. The Imw77 series
including the predicted 1971 index number will be referred
to as Imw77'.

Step 2: Estimating the 1970, 1972, and 1981 Mining Wage
         Index Numbers

First the base year of Imw77' was changed from 1977 to 1975
to facilitate comparison with the 1975-based CPI:

$$Imw75 =d FI[Imw77', 76.531, 1975].$$

Imw75 and the CPI are compared in Graph 1.2. In this graph
the CPI and Imw75 appear to be highly correlated but a
change in the relationship between the two index series
appears to occur during the second half of the 1970's.
Consequently, two separate models involving the CPI as the
explanatory variable were used to estimate the missing
index numbers. The following regression equation was used
to estimate the 1970 and 1972 observations of Imw75:

$$Imw75(t) = -18.8500 + 1.18799 * CPI(t) + e(t)$$
$$(9.5907) \quad (0.1157)$$

t = [1971] & [1973, 1975]   R-squared = 98.14E-02
                                     DW = 3.11
                                      N = 4
                                      F = 10.55E1.

Inserting CPI(1970) = 59.6 and CPI(1972) = 67.3 into the
above equation yielded P[Imw75(1970)] = 51.954 and
P[Imw75(1972)] = 61.102, respectively. After examining the
residuals (see Graph 1.3) no adjustment was made to the
1972 prediction but the 1970 prediction was adjusted by an
add-factor equivalent in value to the 1971 residual
(2.0). Thus the estimated 1970 index number is:

$$P[Imw75(1970)] + 2.0 = 53.954.$$

COMPARISON OF THE MINING WAGE
INDEX AND THE CPI, 1975=100

x : Imw75(1)
—: CPI
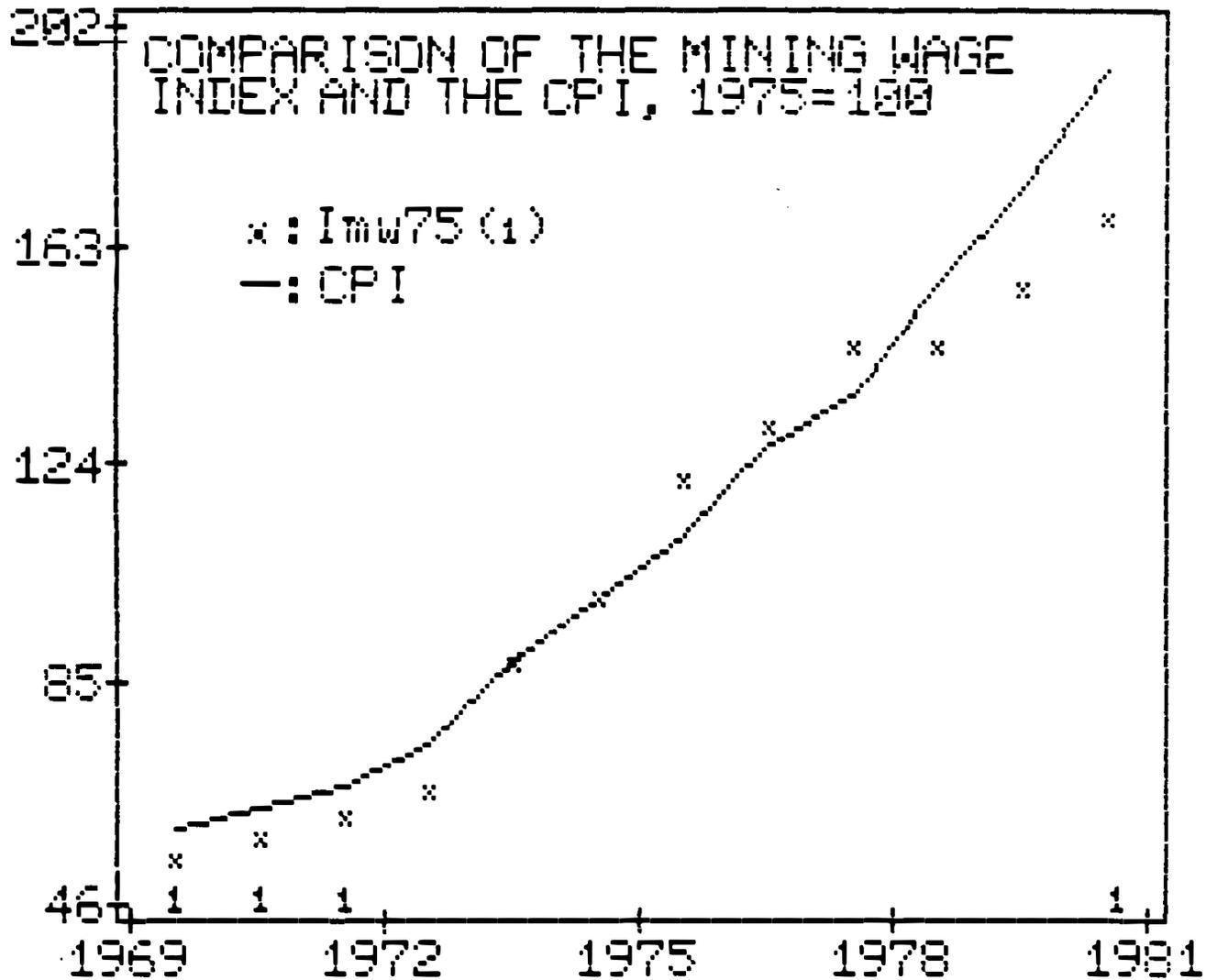
GRAPH 1.2: For the Mining Wage Index

-4-

ANALYSIS OF RESIDUALS FROM
A REGRESSION OF Imw75 ON THE
CPI, t=1971 AND 1973-1975
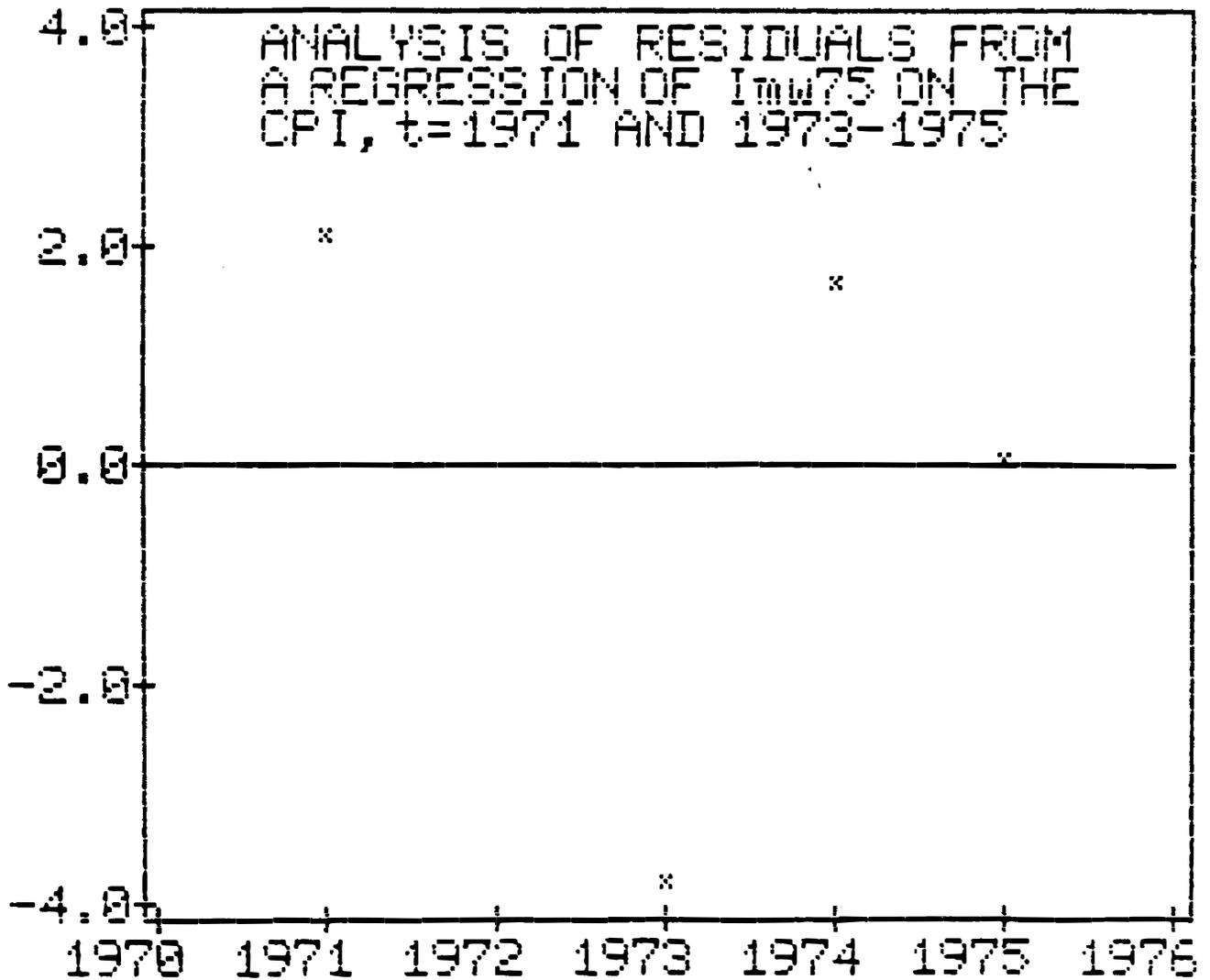
GRAPH 1.3: For the Mining Wage Index

The following estimated regression equation was used to estimate the 1981 observation of Imw75:

$$Imw75(t) = 65.7484 + 0.52275 * CPI(t) + e(t)$$
$$(15.8354) \quad (0.1110)$$

t = [1976, 1980]   R-squared = 88.09E-02
                         DW = 2.63
                          N = 5
                          F = 22.18.

Inserting CPI(1981) = 194.2 into the above equation yielded P[Imw75(1981)] = 167.267. This equation provided a relatively good fit for the 1979 and 1980 observations, so no adjustment was made to the1981 prediction.

2. Construction Wage Index Construction Methodology

This index was constructed from the construction wage series for 1973-1980 which resides in DS-2.1. An index of the average wagebill per construction employee for 1972-1980 was compared to the wage index but did not appear to exhibit a stable relationship with this series and thus was not used in the estimation of the 1972 construction wage index number. The construction wage index did however appear to be related to the CPI. Two separate regression equations with the CPI as the explanatory variable were used to estimate the 1970-1972 and 1981 index numbers. For 1972-1980, DS-2.2 and DS-2.3 contain, for a sample of construction firms, total salaries and wages and total persons engaged, respectively. The CPI for 1970-1981 resides in DS-1.4.

Step 1: Constructing and Comparing an Index of the Average Wagebill per Construction Employee and an Index of Construction Wages

First a 1972-1980 series of the average wagebill per construction employee was constructed from the DS-2.2 series of total wages and salaries and the DS-2.3 series of number of persons engaged. See TN-2 for a brief discussion of unit value construction and unit value bias. Letting AWB represent the resulting series of the average wagebill per construction employee, a 1977-based index then was

derived:

$$Iawb77 =_d FI[AWB, 0.0038, 1977].$$

A 1977-based construction wage index for 1973-1980 was computed from the DS-2.1 wage series:

$$Iwge77 =_d FI[DS-2.1, 2.980, 1977].$$

Iwge77 and Iawb77 are compared in Graph 2.1. Since the relationship between these two series does not appear to be stable during the first half of the 1970's, Iawb77 was not used in the estimation of the 1972 observaton of Iwge77. The average wagebill per construction employee series is similar to a unit value series in that changes in the composition of the construction labor force or changes in the hours worked by the various categories of construction employees could result in a "unit value bias".

Step 2: Estimating the 1970-1972 Observations of the
        Construction Wage Index

First a 1975-based construction wage index was derived from the DS-2.1 series:

$$Iwge75 =_d FI[DS-2.1, 1.63, 1975].$$

Then Iwge75 was compared with the 1975-based DS-1.4 CPI in Graph 2.2. This graph suggests a change in the relationship between Iwge75 and the CPI after 1975. Until 1975 the annual percentage increase in the construction wage was less than the annual percentage increase in consumer prices; but after 1975 construction wages generally rose at a faster rate than consumer prices. The following regression equation was used to estimate the 1970-1972 observations of Iwge75:

$$Iwge75(t) = 29.4145 + 0.70192 * CPI(t) + e(t)$$
$$(4.1696) \quad (0.0470)$$

$$t = [1973, 1975] \qquad R\text{-squared} = 99.55E-2$$
$$DW = 2.96$$
$$N = 3$$
$$F = 22.27E1.$$

Table 2.1 below gives the values of CPI and P[Iwge75] for 1970-1972.

COMPARISON OF TWO 1977-BASED
CONSTRUCTION WAGE RELATED INDICES

x : Iwge77
— : Iawb77
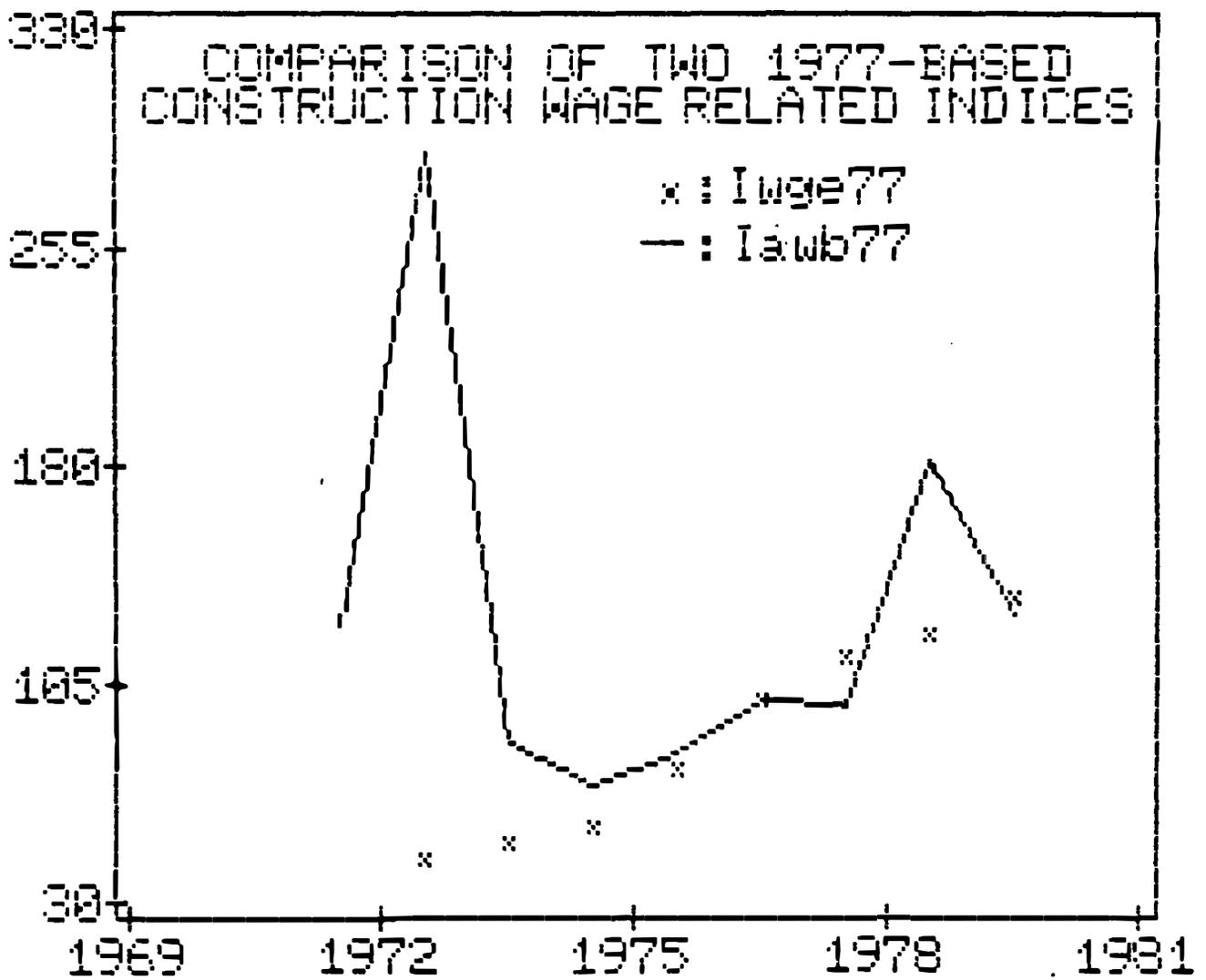
GRAPH 2.1: For the Construction Wage
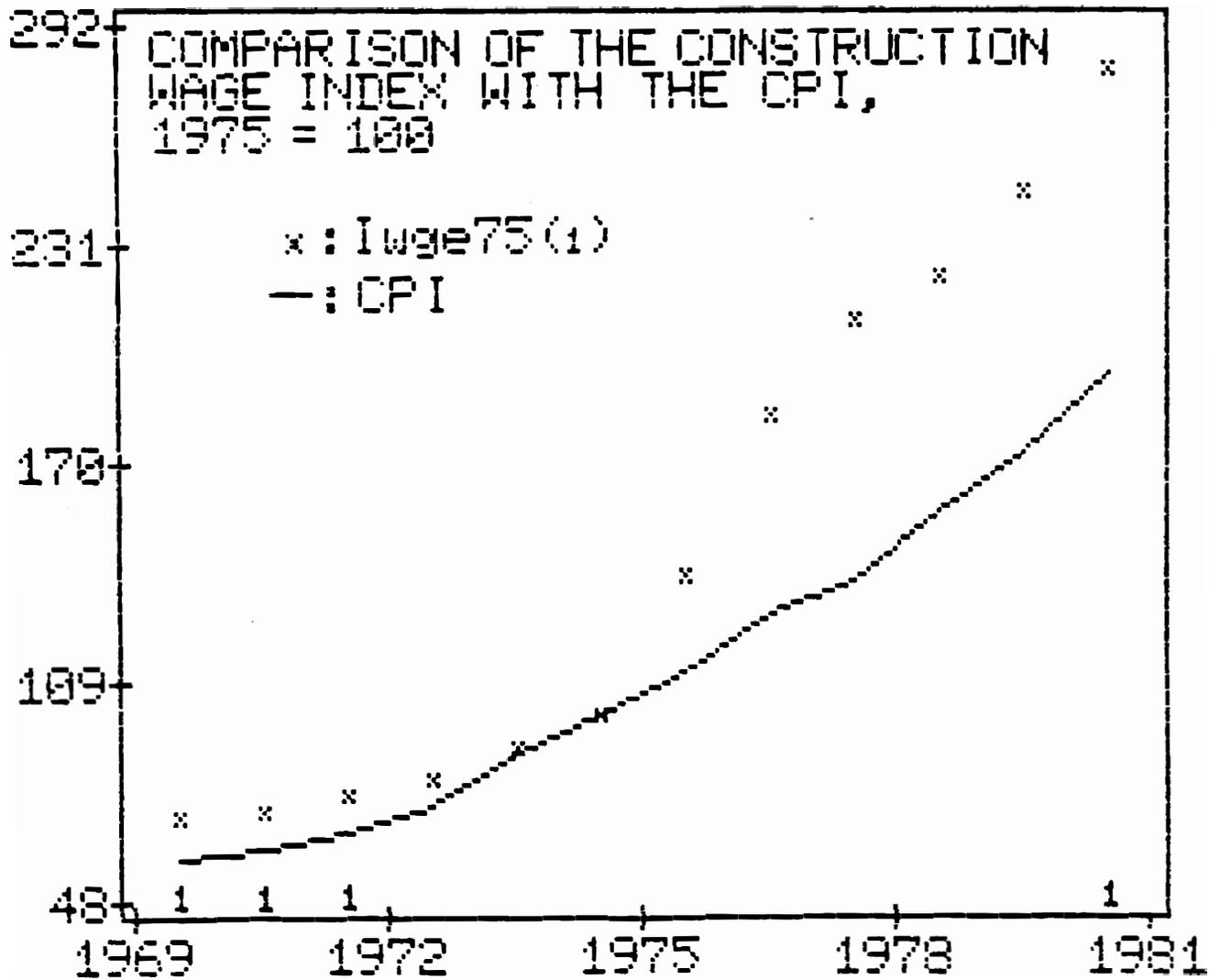
GRAPH 2.2: For the Construction Wage

Table 2.1: Values of CPI and P[Iwge75] for 1970-1972

```
============================
 Year !  CPI  ! P[Iwge75]
------!-------!-----------
 1970 !  59.6 !  71.25
 1971 !  62.7 !  73.42
 1972 !  67.3 !  76.65
============================
```

The above values of P[Iwge75] were used as the 1970-1972
construction wage index numbers.

Step 3: Estimating the 1981 Construction Wage Index Number

The following estimated regression equation was used to
obtain a prediction of the 1981 observation of Iwge75:

$$Iwge75(t) = -30.3968 + 1.62944 * CPI(t) + e(t)$$
$$\qquad\quad (39.6264) \quad (0.2778)$$

$$t = [1976, 1980] \qquad R\text{-squared} = 91.98E\text{-}2$$
$$DW = 1.61$$
$$N = 5$$
$$F = 34.42.$$

Inserting CPI(1981) = 194.2 into the above equation yielded
P[Iwge75(1981)] = 286.04. An examination of the residuals
(see Graph 2.3) suggested the presence of serial
correlation. As an ad-hoc attempt to reduce the effect of
this problem on the 1981 prediction, P[Iwge(1981)] was
adjusted by an add-factor of -7.0. Thus the 1981
construction wage index number given in Appendix 1 is

$$P[Iwge75(1981)] + P[e(1981)] = 286.04 - 7.0$$

$$= 279.04.$$

The adjusted prediction results in a 13.71% increase in the
construction wage from 1980 to 1981 which is slightly
higher than the 12.06% increase in consumer prices from
1980 to 1981.

RESIDUALS FROM A REGRESSION OF Iwge75 ON THE CPI, t=[1976,1980]
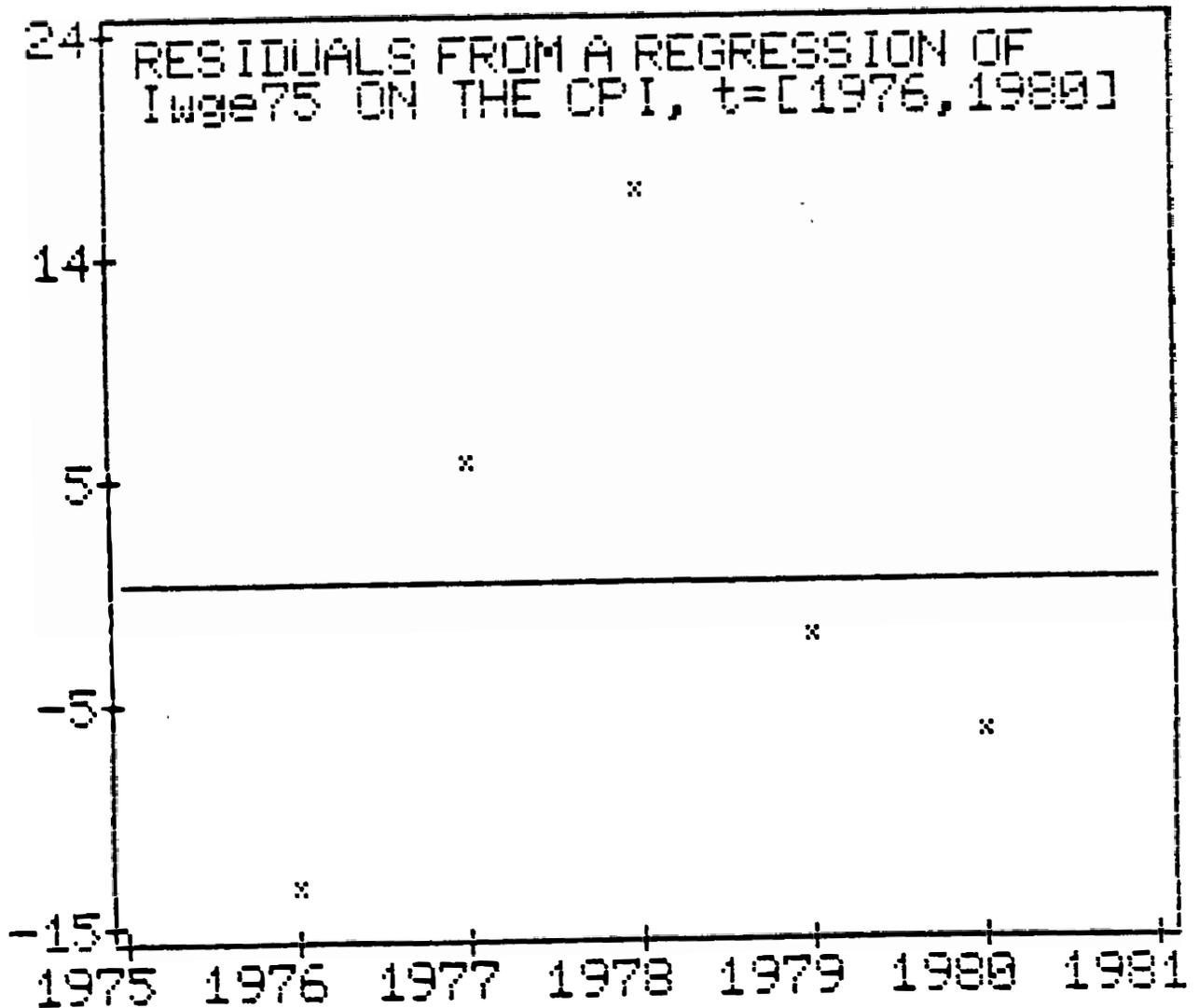
GRAPH 2.3: For the Construction Wage

3. Equipment and Repair Parts Index Construction
   Methodology

After comparing a unit value index of imported machinery
and transport equipment with the mining machinery export
price index of a major exporter of mining machinery to
Jordan, the United States, the latter series was used for
this index. The unit value index was available in two
parts, each with a different base year. DS-3.1 contains
the 1969-based unit value index for 1970-1976 and DS-3.2
contains the 1979-based index for 1976-1981. In DS-3.3
resides the U.S. mining machinery export price index for
1970-1981, and in DS-13.1 resides the U.S. dollars per
dinar exchange rates.

Step 1:   Constructing a 1970-based Unit Value Index of
          Imported Machinery and Transport Equipment

First the DS-3.2 series, which was a 1979-based index, was
extended from 1976 to 1970 with the 1969-based DS-3.1
series as follows:

$$I79(t) =d\ DS\text{-}3.2,\ t = [1976,1981]$$

$$I79(t) =d\ I79(1976) * I69(t) / I69(1976),\ t = [1970,1975]$$

where I69 represents the DS-3.1 index. The base year of
I79 was then changed to 1970

$$I70 =d\ FI[I79,\ 53.570,\ 1970]$$

and the resulting series was converted from dinars to
dollars for comparison with the U.S. mining machinery
export price index:

$$Iuv70\$(t) =d\ I70(t) * DS\text{-}13.1(t) / DS\text{-}13.1(1970)$$

$$= I70(t) * DS\text{-}13.1(t) / 2.80.$$

Step 2: Constructing a 1970-based U.S. Mining Machinery
        Export Price Index and Comparing It with the Unit
        Value Index

The base year of the DS-3.3 U.S. export price index of
mining machinery, which was denominated in dollars, was
changed from 1977 to 1970:

$$Ixp70\$ =d\ FI[DS\text{-}3.3,\ 41.197,\ 1970].$$

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Ixp70$ and Iuv70$ are compared in Graph 3.1. After observing the dissimilarity in magnitude of the two series (notice, however, that the two series are somewhat similar in trend from 1976-1981) it was decided that the export price index would be a better proxy given the possibility of the presence of unit value bias in the Iuv70$.

Step 3: Converting Ixp70$ to a 1975-based Dinar-denominated Index

First the base year of the DS-3.3 export price index of U.S. mining machinery was changed from 1977 to 1975:

$$Ixp75\$ =d FI[DS-3.3, 78.322, 1975].$$

Then using the DS-13.1 dollars per dinar exchange rates, the resulting index series was converted to a dinar-denominated index series:

$$Ixp75d =d Ixp75\$ * DS-13.1(1975) / DS-13.1(t)$$

$$= Ixp75\$ * 3.1305 / DS-13.1(t).$$

4. Bits and Related Steel Index Construction Methodology

This index was constructed as an average of indices of the wholesale price of iron bars, the wholesale price of iron squares and angles and the unit value of imported iron and steel. Both the wholesale price series and the import unit value series were used for the following reason. Although a producer of some iron and steel products, Jordan also imports a significant quantity. Imported in addition to domestically produced steel products would be included in the wholesale price series, but the latter series were available only for some very specific products (construction steel) whereas the import unit values represented a variety of iron and steel products (including mining drill steel). DS-4.1 and DS-4.5 contain annual averages for 1970-1974 and 1977-1979 of wholesale prices of iron bars and iron squares and angles, respectively. The 1977-1979 observations of both the DS-4.1 and DS-4.5 series were not published as annual averages but were constructed from monthly data which were available. The monthly data from which the 1977-1979 annual average prices of the DS-4.1 series were constructed are in DS-4.2, DS-4.3, and DS-4.4 for 1977, 1978, and 1979, respectively. DS-4.6,

-13-

COMPARISON OF TWO 1970-BASED
MACHINERY INDICES IN DOLLARS

x : Iuv70$
—:Ixp70$
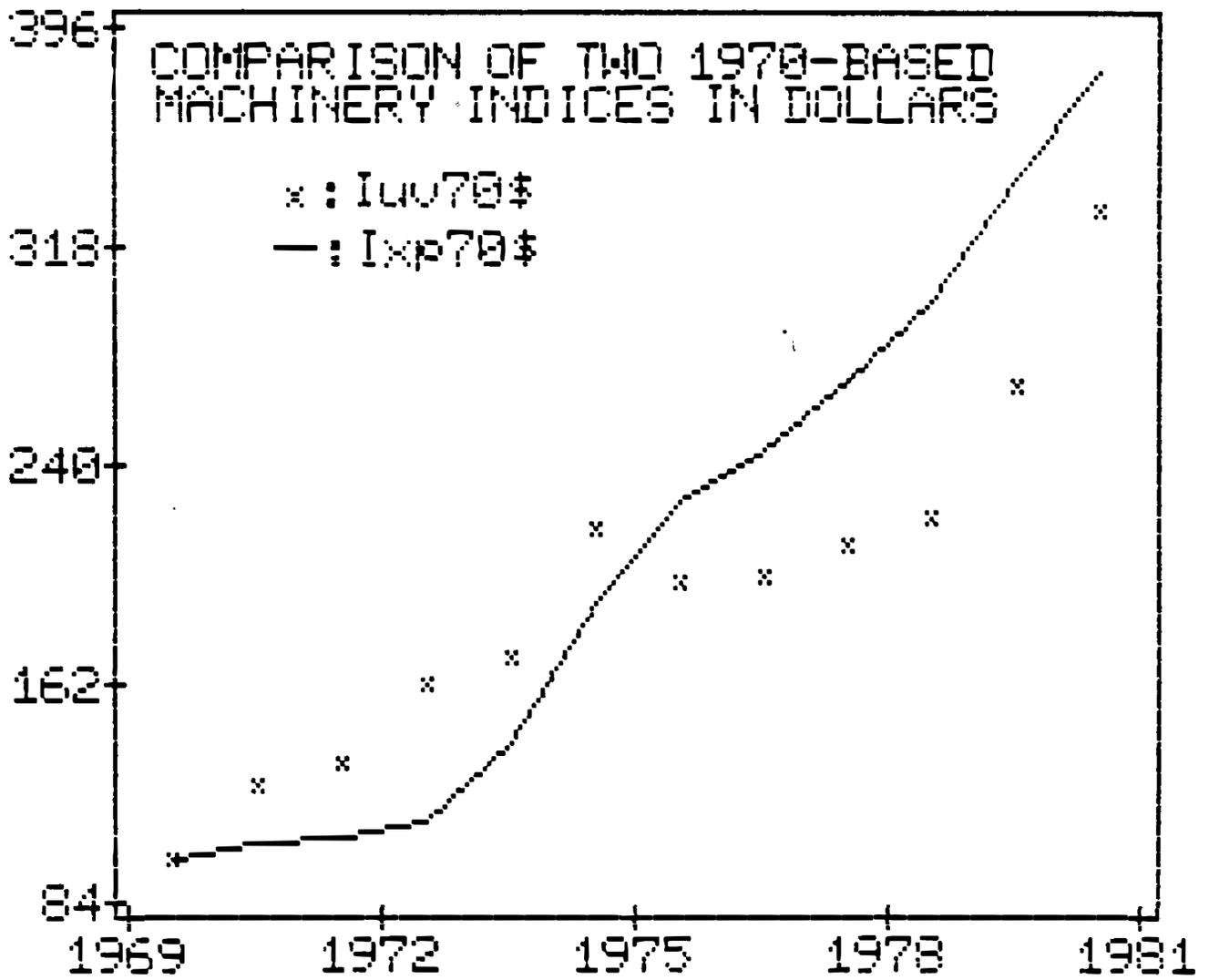
GRAPH 3.1: For Equipment and Parts

DS-4.7, and DS-4.8 contain the monthly data corresponding
to the 1977, 1978 and 1979 annual averages of DS-4.5. A
regression equation with an import price index of metal
products was used in the estimation of the 1975-1976 index
numbers. The import price index of metal products was
available in two pieces: a 1962-based index covering
1970-1975 resides in DS-4.9 and a 1972-based index covering
1972-1976 resides in DS-4.10. A Japanese export price
index of iron and steel products was used in the estimation
of the 1980-1981 wholesale price index numbers of iron
bars, angles, and squares; the former series resides in
DS-4.13 for 1970-1981. Unit values of imported steel for
1970-1981 were constructed from the DS-4.11 and DS-4.12
value and quantity data, respectively.

Step 1: Constructing a Wholesale Price Index of Iron Bars,
          Angles and Squares for 1970-1974 and 1977-1979

This was accomplished by first computing two indices: one
of iron bars and the other of angles and squares:

$$\text{Ibars} =d \ FI[DS-4.1, \ 80.1, \ 1970]$$

$$\text{Iansq} =d \ FI[DS-4.5, \ 83.5, \ 1970].$$

After constructing Ibars and Iansq, a geometric average was
constructed as

$$\text{Iwp70d}(t) =d \ [\text{Ibars}(t) * \text{Iansq}(t)] \ ^\wedge \ 0.5$$

$$t = [1970,1974] \ \& \ [1977,1979].$$

This average is denoted as Iwp70d since it as a dinar-
denominated wholesale price index of iron and steel.

Step 2: Estimating Iwp70d for 1975 and 1976

First Iwp70d was compared to an import price index of metal
products. The metal products index for 1970-1976 was
constructed as

$$\text{Imp72}(t) =d \ DS-4.10, \ t = [1972,1976]$$

$$\text{Imp72}(t) =d \ FI[DS-4.9, \ 163.0, \ 1972], \ t = [1970,1971].$$

Imp72 then was converted to a 1970 base year for comparison

with Iwp70d:

$$Imp70 =d \; FI[Imp72, \; 116.564, \; 1970].$$

Imp70 and Iwp70d are compared in Graph 4.1 where it can be seen that the two series appear to be strongly related. The following regression equation then was estimated:

$$Iwp70d = 14.9889 + 0.86381 * Imp70 + e(t)$$
$$(8.0380) \quad (0.0671)$$

t = [1970,1974]   R-squared = 98.22E-2
                              DW = 2.58
                               N = 5
                               F = 16.6E1.

Inserting Imp70(1975) = 193.027 and Imp70(1976) = 153.564 into the above equation yielded Iwp70d(1975) = 181.728 and Iwp70d(1976) = 147.639. The above equation especially fit the 1973 and 1974 observations very well.

Step 3: Estimating Iwp70d for 1980 and 1981

Our research showed that although not the major exporter of steel, Japan was a consistent supplier of from 5-10% of Jordan's imports (of SITC 673) for 1975-1981. A 1975-based export price index of Japanese iron and steel products in U.S. dollars for 1970-1981 resides in DS-4.13. To compare this series with Iwp70d, the former was converted to a 1970 base year and the latter was converted from dinars to dollars:

$$Ijx70 =d \; FI[DS-4.13, \; 55.8154, \; 1970]$$

$$Iwp70\$ =d \; Iwp70d(t) * DS-13.1(t) \; / \; DS-13.1(1970)$$

$$= Iwp70d(t) * DS-13.1(t) \; / \; 2.8.$$

A comparison of Iwp70$ and Ijx70 suggests a lagged relationship between the two series (see Graph 4.2 where Iwp70$(t) and Ijx70(t-1) are plotted against time). After examining Graph 4.2, the following regression equation was estimated:

$$Iwp70\$(t) = 68.2943 + 0.53852 * Ijx70(t-1) + e(t)$$
$$(24.1575) \quad (0.1271)$$

WHOLESALE PRICE INDEX OF STEEL FOR CONSTRUCTION AND IMPORT PRICE INDEX OF METAL PRODUCTS: 1970=100, IN DINARS

— : Iwp70d (1)
x : Imp70
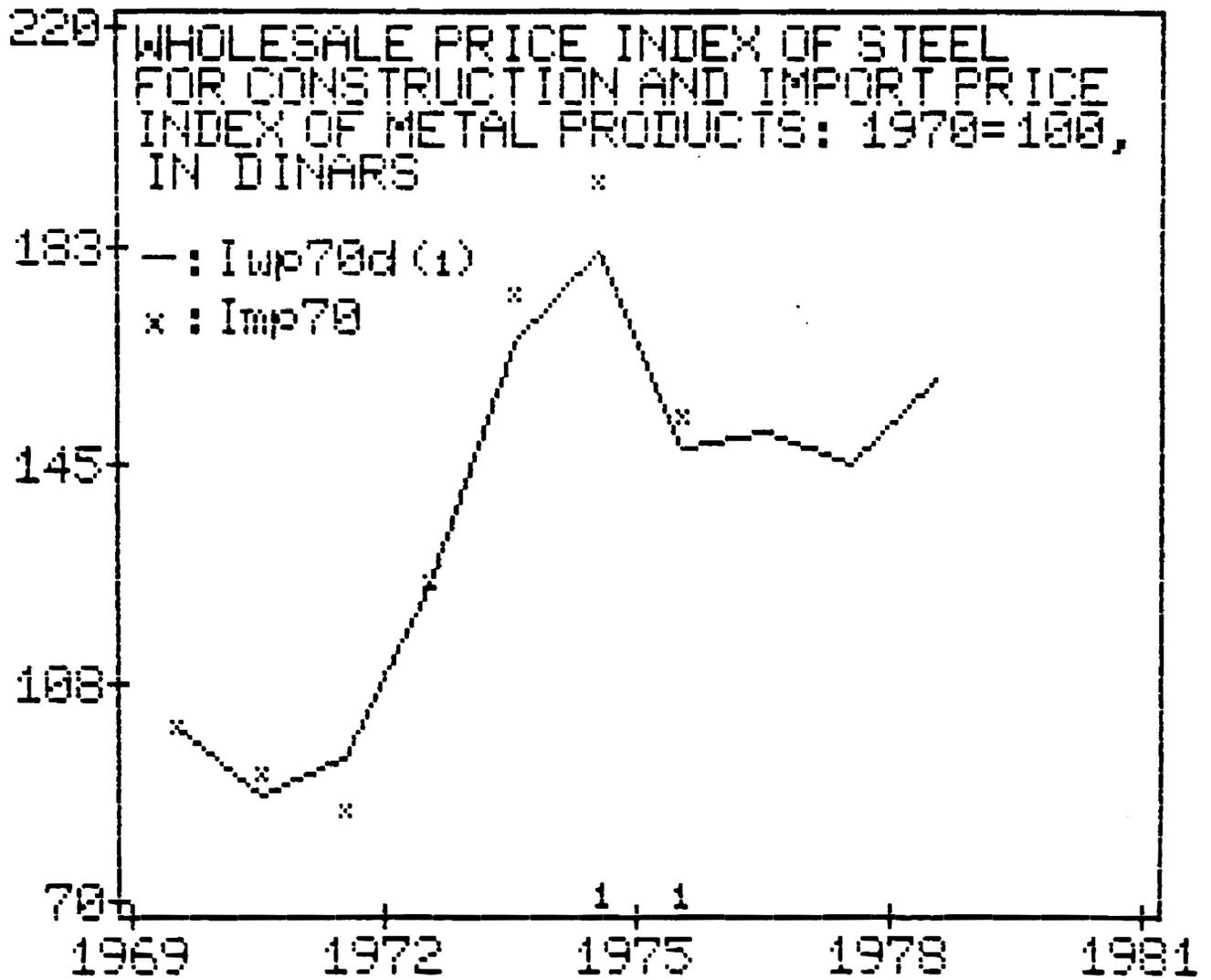
GRAPH 4.1: For Bits and Related Steel

COMPARISON OF TWO 1970-BASED STEEL PRODUCTS INDICES IN U.S. DOLLARS:JORDAN'S WHOLESALE PRICE AND JAPAN'S EXPORT PRICE LAGGED ONE PERIOD

x : Iwp70$(t)(1)

—: Ijx70(t-1)
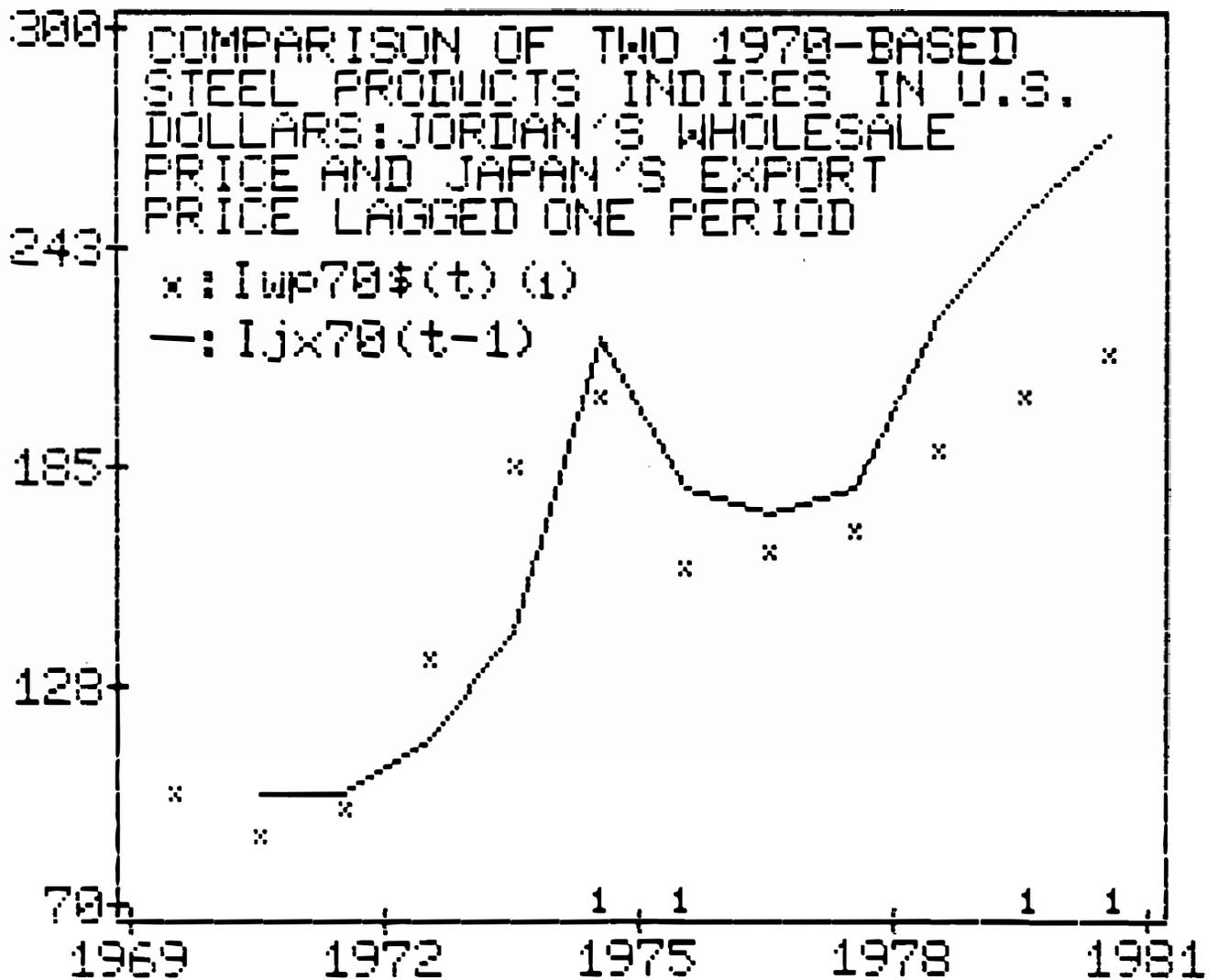
GRAPH 4.2: For Bits and Related Steel

$$t = [1976, 1979] \qquad \text{R-squared} = 89.97\text{E-2}$$
$$\text{DW} = 1.45$$
$$\text{N} = 4$$
$$\text{F} = 17.94.$$

Inserting Ijx70(1979) = 251.382 and Ijx70(1980) = 272.504 into the above equation yielded P[Iwp70$(1980)] = 203.669 and P[Iwp70$(1981)] = 215.044, respectively. No pattern in the residuals could be discerned, so the above predictions were used without modification.

Step 4: Constructing a Unit Value Index of Imported Steel

First unit values were constructed from the DS-4.11 value and DS-4.12 quantity data according to the procedure outlined in TN-2. Letting UV$ represent the 1970-1981 unit value series, a 1970-based index was constructed:

$$\text{Iuv70\$} =d \text{ FI[UV\$, } 0.1473, 1970].$$

Iuv70$ was then compared with the Japanese export price index of iron and steel products, Ijx70. Given the striking similarity of the two series (see Graph 4.3) it did not seem necessary to attempt to adjust Iuv70$ for unit value bias.

Step 5: Averaging Iuv70$ and Iwp70$

A weighted geometric average of Iuv70$ and Iwp70$ was computed as follows:

$$\text{Iavg70\$(t)} =d \text{ Iuv70\$(t)} \char`\^ 0.333 * \text{Iwp70\$(t)} \char`\^ 0.666$$

$$t = [1970,1981].$$

Step 6: Converting Iavg70$ to a 1975-based Index in Dinars

First the base year of Iavg70$ was changed to 1975:

$$\text{Iavg75\$} =d \text{ FI[Iavg70\$, } 196.216, 1975].$$

Then Iavg75$ was converted to dinars:

$$\text{Iavg75d(t)} =d \text{ Iavg75\$(t) * DS-13.1(1975) / DS-13.1(t)}$$

$$= \text{Iavg75\$(t) * } 3.1305 \text{ / DS-13.1(t).}$$

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COMPARISON OF TWO 1970-BASED
U.S. DOLLAR-DENOMINATED STEEL
INDICES: IMPORT UNIT VALUE AND
JAPANESE EXPORT PRICE

x : Iuv70$
—: Ijx70
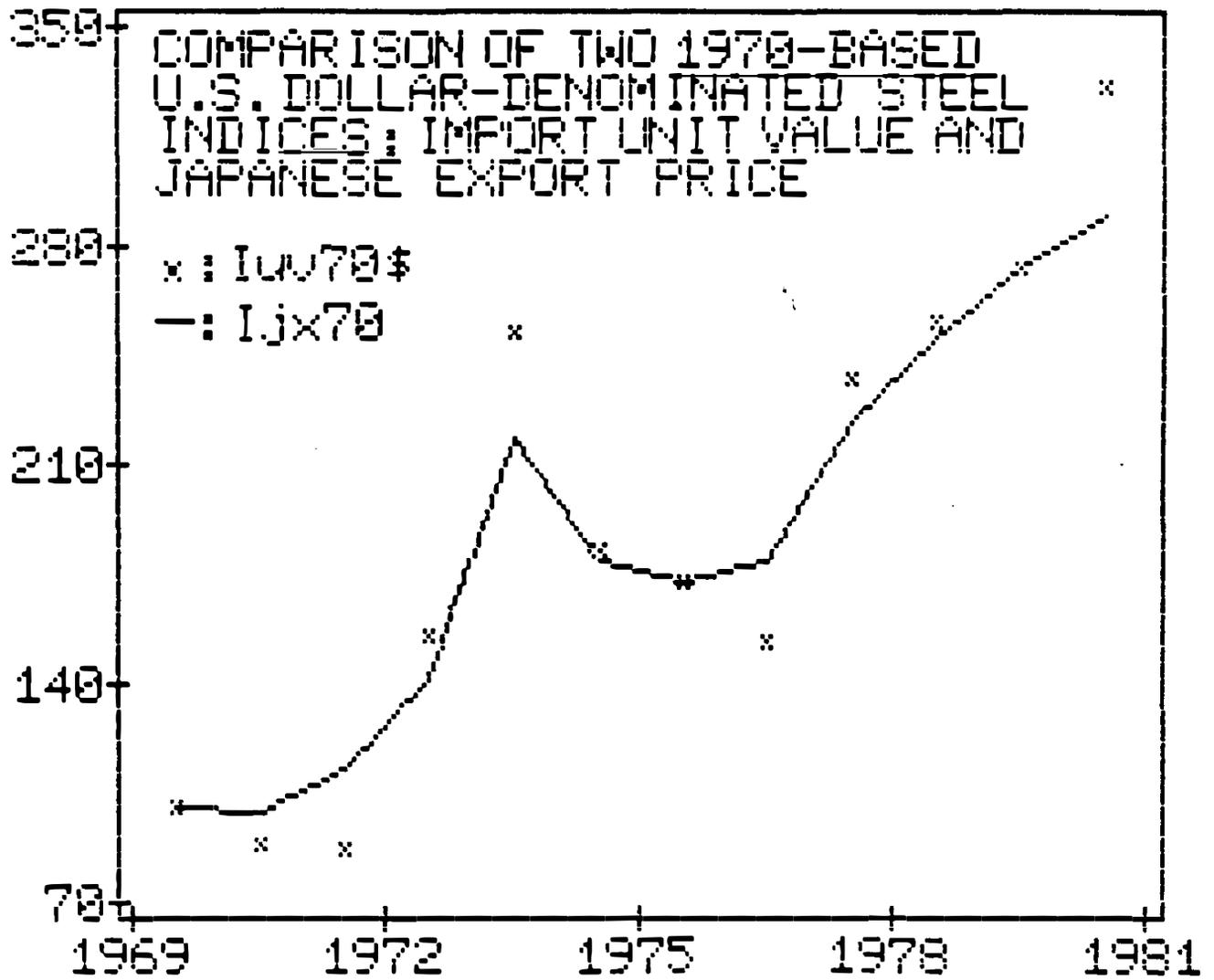
GRAPH 4.3: For Bits and Related Steel

5. Timber and Lumber Index Construction Methodology

A series of the wholesale price of timber in Amman was used to construct this index. Annual average prices were available for 1970-1974. Timber prices for the twelve months of 1977-1979 were available but for 1981, only the January price was available. In addition to the annual averages for 1970-1974, DS-5.1 contains 12-month averages for 1977-1979 computed from the monthly data for 1977 in DS-5.2, for 1978 in DS-5.3 and for 1979 in DS-5.4. The Janaury 1981 price also resides in DS-5.1. A wholesale price index in Amman of paper and wood which resides in DS-5.5 for 1975-1981 was used in the estimation of the 1975-1976 and 1980 timber index numbers.

Step 1: Constructing and Comparing Two Wood Indices

Since no 1975 timber price was available, to facilitate comparison, the DS-5.1 timber price series and the DS-5.5 paper and wood index series both were converted to 1979-based index series:

$$Itbr79 =d FI[DS-5.1, 75.333, 1979]$$

$$Ipwd79 =d FI[DS-5.5, 118.3, 1979].$$

Itbr79 and Ipwd79 are compared in Graph 5.1 where it can be seen that in general they are very similar and for 1978 and 1981, they are almost identical. Given the similarity of these two series, Itbr(1981), which was constructed from the January 1981 price, was not adjusted.

Step 2: Estimating the 1975-1976 and 1980 Observations of Itbr79

After comparing Itbr79 and Ipwd79 the following regression equation was estimated:

$$Itbr79(t) = 5.61808 + 0.95758 * Ipwd(t) + e(t)$$
$$(9.7120)(0.0886)$$

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COMPARISON OF TWO 1979-BASED WOOD INDICES

x : Ipwd79
— : Itbr79(1)
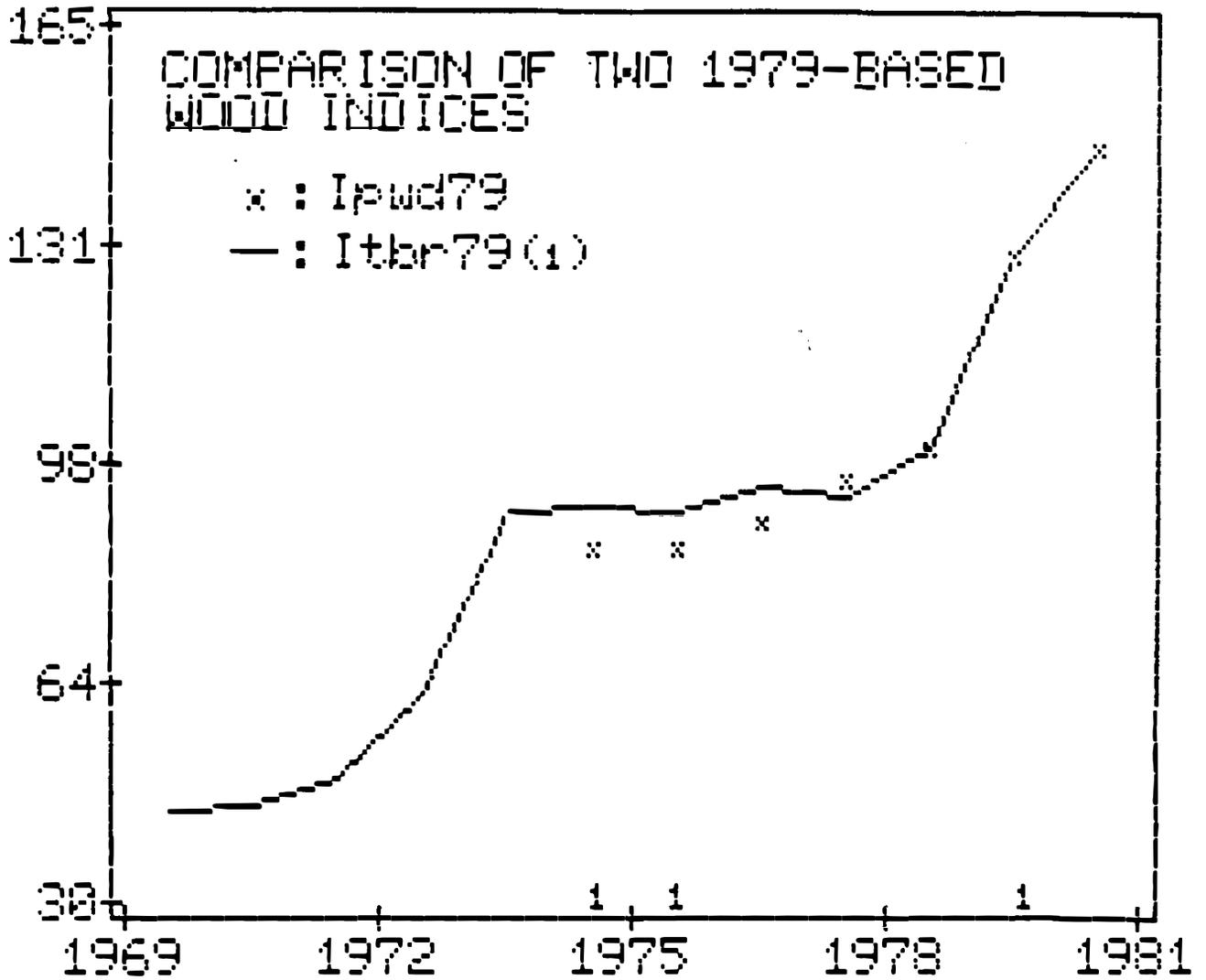
GRAPH 5.1: For Timber and Lumber Index

```
              t = [1977,1979] & [1981]      R-squared = 98.32E-2
                                                   DW =  2.11
                                                    N =  4
                                                    F = 11.7E2.
```

Inserting Ipwd(1980) = 129.84 into the above equation
yielded P[Itbr(1980)] = 129.95. Since the predicted and
actual values of Itbr were almost equivalent for both 1979
and 1981, no adjustment was made to the 1980 prediction.
The percentage change from the previous year for 1977 and
1976 of the predicted values, however, were used to obtain
adjusted 1975 and 1976 predictions

Pa[Itbr(1976)] = Itbr(1977) * P[Itbr(1976)] / P[Itbr(1977)]

             = 94.248 * 86.078 / 90.044

             = 90.096

Pa[Itbr(1975)] = Pa[Itbr(1976)] * P[Itbr(1975)] / P[Itbr(1976)]

             = 90.096 * 86.563 / 86.078

             = 90.605

where Pa[Itbr] represents the adjusted predictions.
P[Itbr] for 1977, 1976 and 1975 were obtained by inserting
Ipwd(1977) = 88.166, Ipwd(1976) = 84.024, and Ipwd(1975) =
84.531, respectively, into the above regression equation.
The adjusted predictions imply an add-factor of
approximately 4, which, incidentally, is the value of
e(1977).

Step 3: Changing the Base Year of Itbr79 to 1975

Letting Itbr79' represent the Itbr79 series with the
1975-1976 and 1980 estimates included, the 1975-based index
was constructed as:

              Itbr75 =d FI[Itbr79', 90.605, 1975].

6.   Fuel Index Construction Methodology

The DS-6.1 series of diesel prices for 1970-1971 and
1975-1979 were used as the basis for the construction of
this index. A series of the wholesale price of diesel in
Amman, which resides in DS-6.3 for 1970-1974, was used in

                          -23-

the estimation of the 1972-1974 index numbers. A
regression equation with the list price of Persian Gulf
diesel as the explanatory variable was used to estimate the
1980-1981 index numbers. The Persian Gulf diesel series
for 1970-1981 resides in DS-6.2. Other series necessary
for the construction of this index were the DS-13.1 U.S.
dollars per dinar exchange rates and the DS-6.4 SDRs per
dinar exchange rates. Both series cover 1970-1981.

Step 1: Estimating the 1972-1974 Observations of the DS-6.1
          Series

First the observations of the DS-6.1 series had to be
converted to the same currency unit. The 1970-1971
observations were expressed in U.S. cents per litre but
the 1975-1979 observations were expressed in 0.01 SDRs per
litre. Using the U.S. dollars per dinar exchange rates in
DS-13.1 and the SDRs per dinar exchange rates in DS-6.4,
the DS-6.1 diesel price series was converted to a
dinar-denominated series (DS-6.1d) as follows:

DS-6.1d(t) = DS-6.1(t) / DS-13.1(t), t = [1970,1971]

DS-6.1d(t) = DS-6.1(t) / DS-6.4(t), t = [1975,1979].

A comparison of the DS-6.1d series with the DS-6.3 series
of diesel wholesale prices in Amman showed that both series
indicated no change in the price of diesel from 1970-1971.
Futhermore, the DS-6.3 series showed no change over the
entire 1970-1974 period. Thus, the 1972-1974 observations
of DS-6.1d were estimated as being equivalent to the 1970
and 1971 observations of DS-6.1d.

Step 2: Constructing Two Diesel Price Indices

A 1975-based index was constructed from the DS-6.1d diesel
price series using the following index function:

Idsl1 =d FI[DS-6.1d, 1.5510, 1975].

Idsl1 was then converted to U.S. dollars for comparison with
the DS-6.2 series of Persian Gulf diesel prices:

Idsl1$ =d Idsl1(t) * DS-13.1(t) / DS-13.1(1975)

= Idsl(t) * DS-13.1(t) / 3.1305.

The DS-6.2 series of the list price of Persian Gulf diesel,
which was denominated in U.S. dollars, was converted to a

-24-

1975-based index using the following index function:

$$Idsl2\$ =d\ FI[DS-6.2,\ 33.6,\ 1975].$$

Step 3: Estimating the 1980 and 1981 Observations of Idsl1\$

The following regression equation was estimated:

$$Idsl1\$(t) = 62.4433 + 0.56890 * Idsl2\$(t) + e(t)$$
$$ (3.9992) (0.0279)$$

$$t = [1976,1979] \qquad \text{R-squared} = 99.52E-2$$
$$\text{DW} = 3.23$$
$$\text{N} = 4$$
$$\text{F} = 41.7E1.$$

Examination of Idsl1\$ and Idsl2\$ plotted against time (see Graph 6.1) suggests that a change in their occurs at about 1976. Thus only the 1976-1979 observations were used to estimate the model. Inserting Idsl2\$(1980) = 309.52 and Idsl2\$(1981) = 324.41 into the above equation yielded 1980 and 1981 predictions of 238.53 and 247.00, respectively. An examination of the residuals showed that the above regression equation provided a very good fit for each of the 1976-1979 observations; so, under the assumption that the relationship between the two diesel series for 1976-1979 remained stable for the entire 1976-1981 period, P[Idsl1\$] for 1980 and 1981 were used unadjusted. Idsl1\$ extended to 1981 will be denoted as Idsl1\$'.

Step 4: Converting Idsl1\$' to a Dinar-denominated Series

The final step was to convert Idsl1\$' to a dinar-denominated series by dividing each observation by the appropriate dollars per dinar exchange rate from DS-13.1 and then multiplying the result by the 1975 exchange rate (3.1305).

7. Explosives Index Construction Methodology

Since ammonium nitrate, a primary ingredient of mining explosives, is also used in many manufactured fertilizers, manufactured fertilizers were used as a proxy for explosives. In the absence of domestic price series of

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COMPARSION OF TWO 1975-BASED
DIESEL INDICES IN U.S.DOLLARS

x:Ids11$ (1)
—:Ids12$
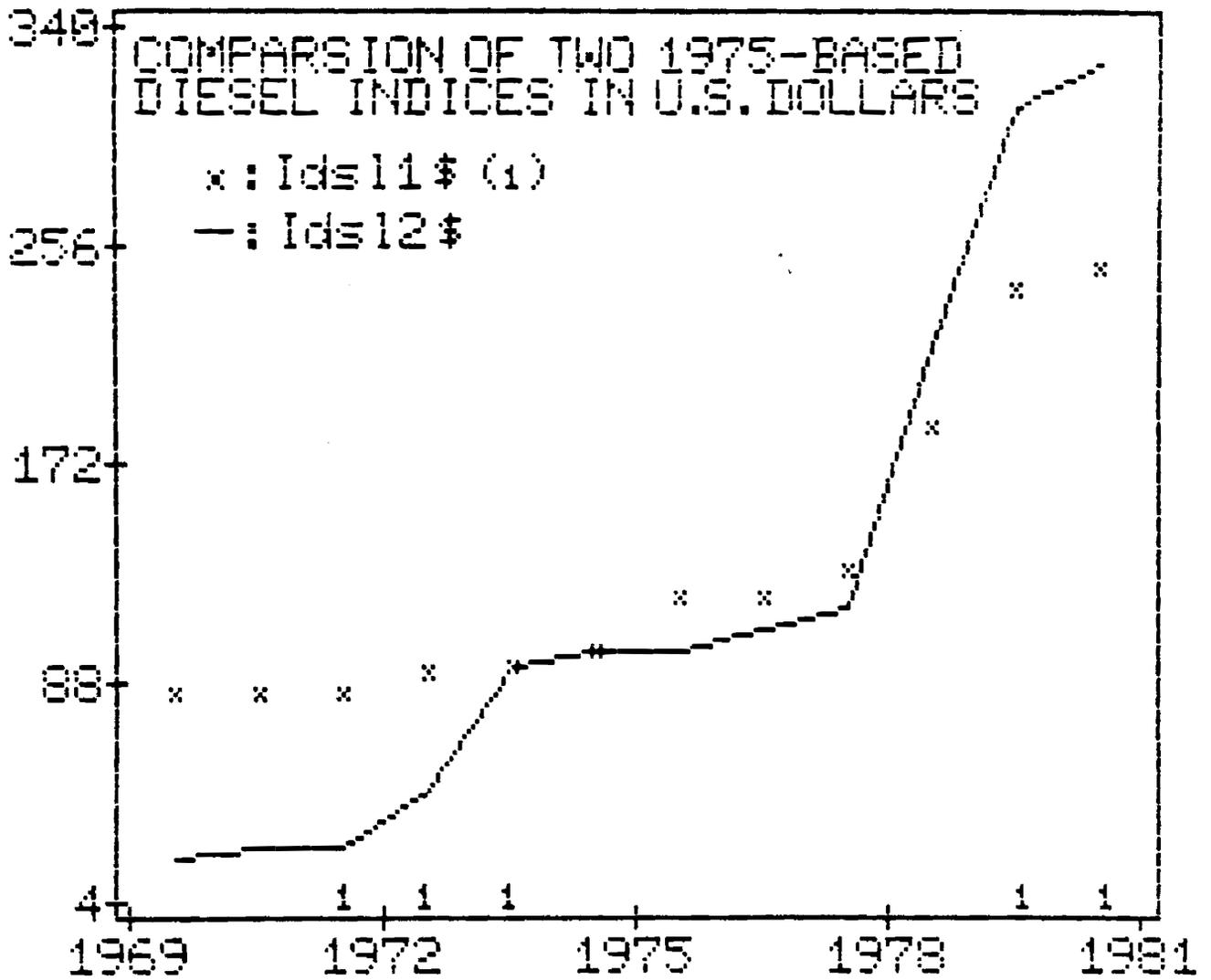
GRAPH 6.1: For the Fuel Index

manufactured fertilizers, unit vales of imports were used.
Also available were import value and quantity data of
explosives; but the unit values constructed from these data
appeared to be dominated by unit value bias. The
manufactured fertilizers unit value index was compared with
a commodity price index of a nitrogenous compound
frequently used in fertilizer manufacturing, urea. The
manufactured fertilizers index appeared to exhibit more
than a tenuous relationship to the urea commodity price
index. DS-7.1 and DS-7.2 contain for 1970-1981 the import
value and import quantity, respectively, of manufactured
fertilizers. DS-7.3 contains a world commodity price index
for urea covering 1970-1981. DS-13.1 contains the U.S.
dollars per dinar exchange rates for 1970-1981.

Step 1: Constructing the Unit Value Index

First unit values of imported manufactured fertilizers were
constructed from the DS-7.1 value and DS-7.2 quantity data
according to the procedure described in TN-2. Letting UV$
represent the resulting unit value series, which was
denominated in dollars, the 1975-based index was
constructed as:

$$Iuv\$ =d FI[UV\$, 0.1996, 1975].$$

Step 2: Comparing Iuv$ With the Urea Index

The DS-7.3 commodity price index of urea (Iurea), which is
a 1975-based index denominated in dollars, is compared with
Iuv$ in Graph 7.1. Here it can be seen that the two series
do appear to be somewhat related. What is most noticeable
about both series is that sharp increases occur in the mid-
and late-1970's. Given that fertilizer manufacturing
is an energy intensive process, these phenomena may be
related to the 1973-1974 and 1979-1980 oil shocks.

Step 3: Converting Iuv$ to Dinars

Each observation of Iuv$ was multiplied by the 1975 dollars
per dinar exchange rate (3.1305) and then divided by the
dollars per dinar exchange rate for the same year form
DS-13.1.

COMPARISON OF MANUFACTURED
FERTILIZERS WITH UREA, 1975=100,
U.S.DOLLARS

x : Iuv$

— : Iurea
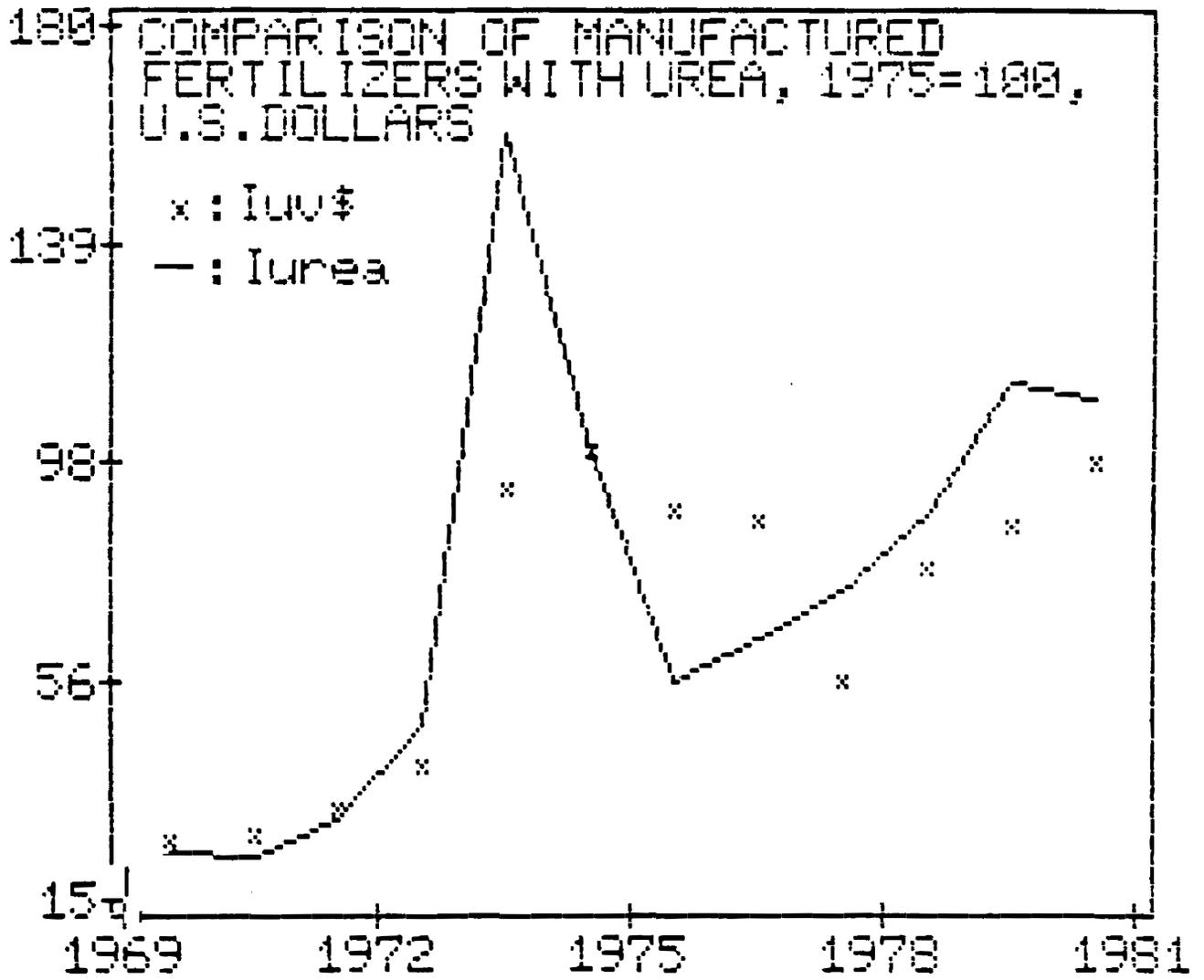
GRAPH 7.1: For the Explosives Index

8. Tires Index Construction Methodology

Our research showed that for the period covered by this index Japan supplied more than 50% (and frequently more than 60%) of the quantity of tires imported per year by Jordan. Because of the potential for unit value bias to exist in price proxies constructed from trade data, the wholesale price index of Japanese tires for export which resides in DS-8.1 for 1970-1981 was used to construct this index instead of unit values.

Step 1: Constructing a Dinar-denominated Index

The only necessary step was to convert the 1975-based U.S. dollar-denominated Japanese export tire price index to Jordanian dinars using the DS-13.1 dollars per dinar exchange rates:

$$Idinars =_d DS\text{-}8.1(t) * DS\text{-}13.1(1975) / DS\text{-}13.1(t)$$

$$= DS\text{-}8.1(t) * 3.1305 / DS\text{-}13.1(t).$$

9. Construction Materials Index Construction Methodology

A 1975-based wholesale price index of construction materials for 1975-1981 was available in DS-9.1. A geometric average of an index of cement prices and an index of prices of iron bars, angles and squares for construction was used as the explanatory variable in a regression equation which was used to predict the 1970-1974 construction materials index numbers. DS-9.1 contains the wholesale price index of construction materials in Amman for 1975-1981. DS-9.2 contains wholesale prices of cement for 1970-1974 and 1977-1979. The 1977-1979 cement prices are 12-month averages constructed from the monthly data in DS-9.3 for 1977, in DS-9.4 for 1978, and in DS-9.5 for 1979. The price index of iron bars, squares and angles was constructed as described in the Bits and Related Steel Index Construction Methodology.

Step 1: Constructing a Wholesale Price Index of Cement and Iron Bars, Angles, and Squares Prices

First a 1979-based cement price index was constructed from

the DS-9.2 cement price series:

$$Icemt79 =d\ FI[DS-9.2, 23, 1979].$$

A 1970-based wholesale price index of iron bars, angles and squares, Iwp70d, was constructed for the Bits and Related Steel Index. The base year of this index was changed from 1970 to 1979:

$$Iiron79 =d\ FI[Iwp70d, 159.256, 1979].$$

Next a geometric average was computed from Iiron79 and Icemt79:

$$Iirce79(t) =d\ [Iiron79(t) * Icemt79(t)]\ ^\wedge\ 0.5$$

$$t = [1970,1974]\ \&\ [1977,1979].$$

Step 2: Comparing the DS-9.1 Construction Materials Index with Iirce79

First the base year of the DS-9.1 wholesale price index of construction materials was changed from 1975 to 1979:

$$Iconm79 =d\ FI[DS-9.1, 154.50, 1979].$$

Then Iconm79 and Iirce79 were compared in Graph 9.1. Although Iconm79 appears to have a slightly steeper slope than Iirce79, this graph suggests that the two series are almost identical for the three years common to both, 1977-1979.

Step 3: Estimating Iconm79 for 1970-1974

The following estimated regression equation was used to obtain 1970-1974 predictions of Iconm79:

$$Iconm79(t) = -11.6114 + 1.11251 * Iirce79(t) + e(t)$$
$$\qquad\quad (8.4733)\qquad (0.0907)$$

$$t = [1977, 1979] \qquad R\text{-squared} = 99.34E\text{-}2$$
$$DW = 2.99$$
$$N = 3$$
$$F = 15.04E1.$$

Predictions for 1970-1974 of Iconm79 were obtained by inserting the 1970-1974 values of Iirce79 into the above equation. Table 9.1 gives the 1970-1974 values of P[Iconm79] and Iirce79.

-30-

COMPARISON OF TWO 1979-BASED
CONSTRUCTION MATERIALS INDICES
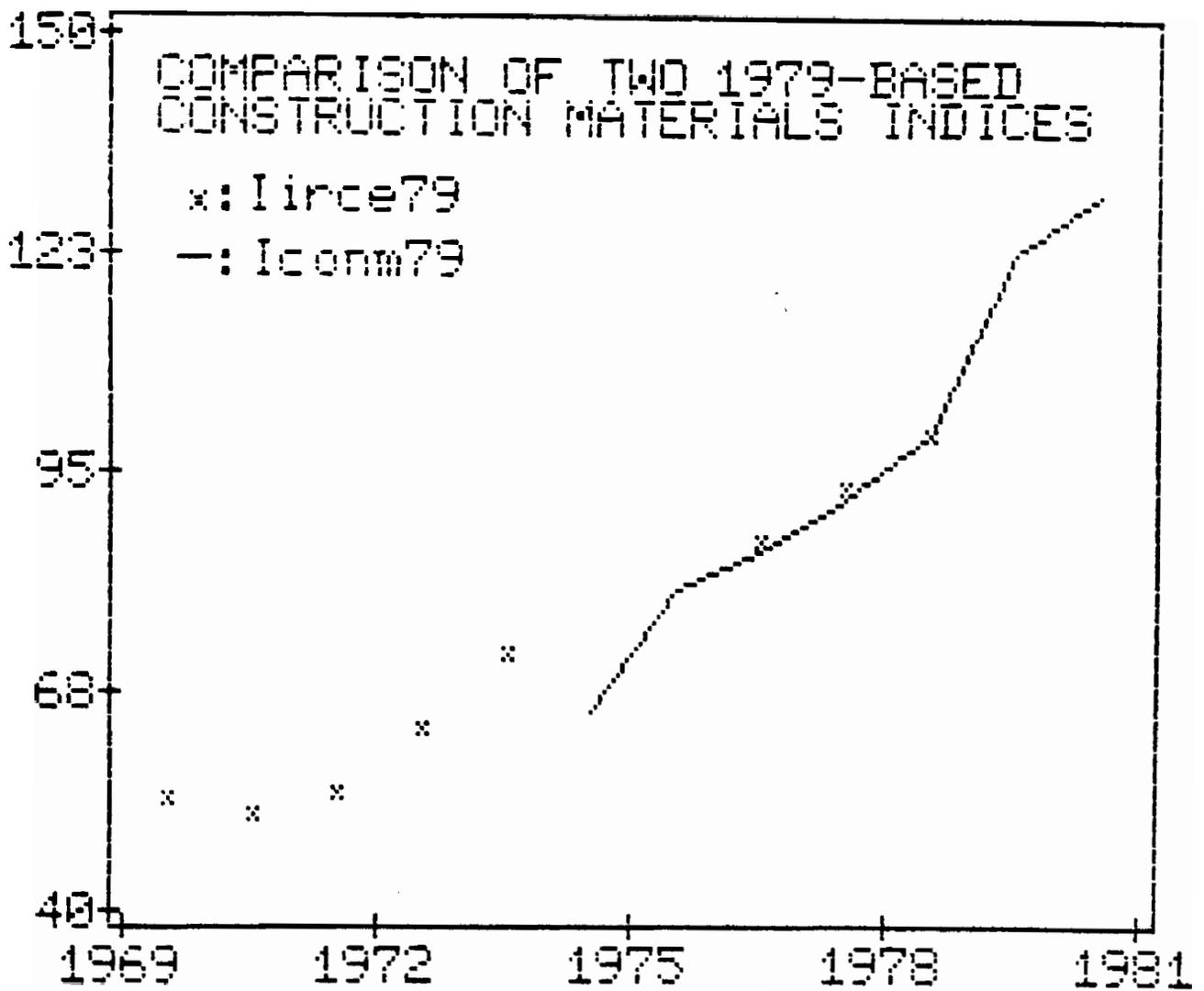
x: Iirce79
—: Iconm79

GRAPH 7.1: For Construction Materials

Table 9.1: Values of P[Iconm79] and Iirce79 for 1970-1974

```
===================================
 Year ! P[Iconm79] !  Iirce79
------!------------!-----------
 1970 !    48.517  !  54.048
 1971 !    46.501  !  52.236
 1972 !    49.446  !  54.883
 1973 !    58.084  !  62.647
 1974 !    68.974  !  72.436
===================================
```

The Iconm79 index extended backwards from 1975 to 1970 with
the above predictions will be denoted as Iconm79'. Iconm79'
is compared in Graph 9.2 with the two components of
Iirce79: Iiron79 and Icemt79. After examining this graph,
which suggests that a negative year-to-year percentage
change of Iiron79 and a postiive year-to-year percentage
change of Icemt79 occurred sometime over the 1974-1977
period, it was decided to adjust the 1974 prediction of
Iconm79 with an add-factor of -4.249. This action would
equate the 1974 prediction with Iconm79(1975) = 64.725.

Then the adjusted 1974 prediction of Iconm79, 64.725, was
extended backwards to 1970 using the year-to-year
percentages changes computed from P[Iconm79] for 1970-1974
given in Table 9.1. Table 9.2 gives the adjusted
predictions Pa[Iconm79] for 1970-1974.

Table 9.2: Adjusted Predictions of Iconm79 for 1970-1974

```
======================
 Year ! Pa[Iconm79]
------!--------------
 1970 !    45.529
 1971 !    43.636
 1972 !    46.400
 1973 !    54.505
 1974 !    64.725
======================
```


Step 4: Changing the Base Year of Iconm79' to 1975

As the final step, the base year of the 1975-1981 observations
of Iconm79 and the 1970-1974 observations of Pa[Iconm79]

COMPARISON OF THREE 1979-BASED
CONSTRUCTION MATERIALS RELATED
INDICES

■ : Icemt79
x—x : Iiron79
— : Iconm79'(1)
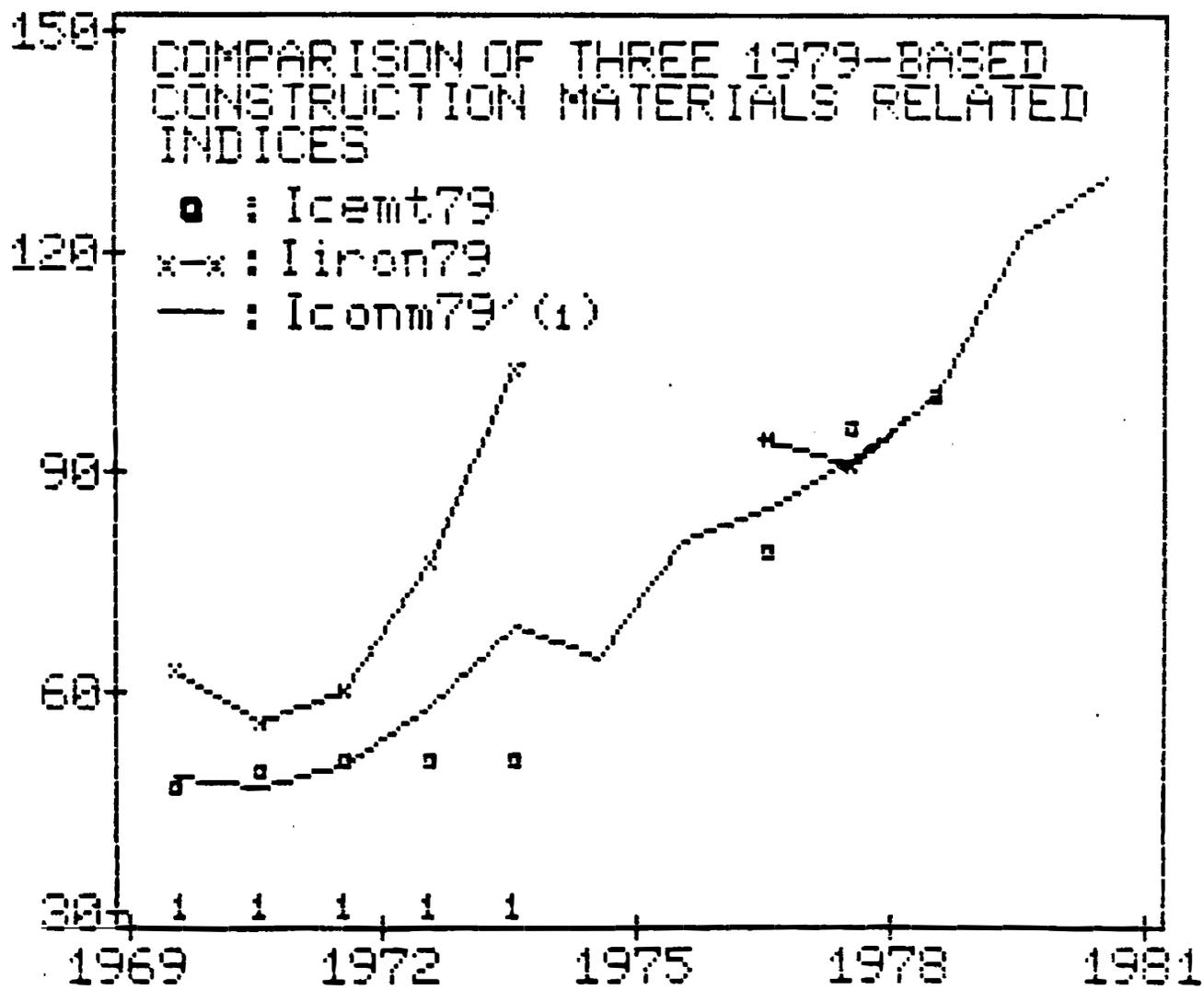
GRAPH 9.2: For Construction Materials

was changed from 1979 to 1975:

Iconm75(t) =d FI[Iconm79(t), 64.725, 1975], t = [1975,1981]

Iconm75(t) =d Pa[Iconm79(t)] * 100 / Iconm79(1975)

         = Pa[Iconm79(t)] * 100 / 64.725, t = [1970,1974].

10. Industrial Materials Index Construction Methodology

A "unit price" index of imported chemicals was used as a
proxy. This series was available in two pieces. DS-10.1
contains a 1969-based index for 1970-1976 and DS-10.2
contains a 1979-based index for 1976-1981.

Step 1: Extending the DS-10.2 Series Backwards from 1976
         to 1970

This was accomplished by creating a 1976-based index
covering the years 1970-1981 as follows:

 Ichm76(t) =d FI[DS-10.1, 192.9, 1976],   t = [1970, 1975]

and

 Ichm76(t) =d FI[DS-10.2, 103.46, 1976],   t = [1976, 1981].

Step 2: Changing the Base Year to 1975

The base year of Ichm76 was then changed to 1975 using the
following index function:

          Ichm75 =d FI[I76, 94.4013, 1975].

Step 3: Adjusting the 1981 Index Number

Ichm75, which appeared to have been constructed from unit
values, was compared with a 1975-based wholesale
price index of goods other than foods, fuels, clothing,
construction materials, pharmaceuticals, transportation
equipment and consumer durables. The wholesale price index
of "other" products, which resides in DS-10.3 for
1975-1981, will be referred to as WPIo. Both WPIo and
Ichm75 are plotted against time in Graph 10.1. Given the

-34-

strong relationship between the two series exhibited
for 1975-1980, this graph suggests that the 1981
observation may contain a large amount of unit value bias.
Instead of using Ichm75(1981) as the 1981 index number, a
prediction was obtained by inflating Ichm75(1980) with the
percentage change from 1980 to 1981 of WPIo:

$$P[Ichm75(1981)] = Ichm75(1980) * WPIo(1981) / WPIo(1980)$$

$$= 130.895 * 149.5 / 137.1$$

$$= 142.732.$$

P[Ichm75(1981)] is compared in Graph 10.1 with Ichm75 and
WPIo.

11. Transportation Index Construction Methodology

A CPI of transportation was used as a proxy. This index
was found in two pieces, each with a different base year.
DS-11.1 contains a 1967-based series for 1970-1976 and
DS-11.2 contains a 1975-based series for 1975-1981. A
regression equation with the Fuel Index as the explanatory
variable was used to predict the 1981 index number.

Step 1: Splicing the DS-11.1 and DS-11.2 Series

To splice the DS-11.1 and DS-11.2 series, the base year of
the DS-11.1 series was changed from 1967 to 1975:

$$I75 =d FI[DS-11.1, 130.1, 1975].$$

The 1970-1974 observations of I75 were used with the
1975-1980 observations of the DS-11.2 series to obtain a
1975-based index for 1970-1980. This series will be
referred to as Itrp. The difference between I75 and the
DS-11.2 series for the one year common to both series,
1976, was only 2.6% of DS-11.2(1976); thus no adjustments
were made to the I75 observations.

Step 2: Comparing Itrp with the Fuel Index and Estimating
         Itrp(1981)

The diesel fuel index constructed as described in the Fuel
Index Construction Methodology, which will be referred to
as Idsl, is compared to Itrp in Graph 11.1. Here it can be

-35-

COMPARISON OF A CHEMICALS IMPORT
UNIT VALUE INDEX WITH A WHOLESALE
PRICE INDEX, 1975=100

x :WPIo
—:Ichm75
o:P[Ichm(1981)]
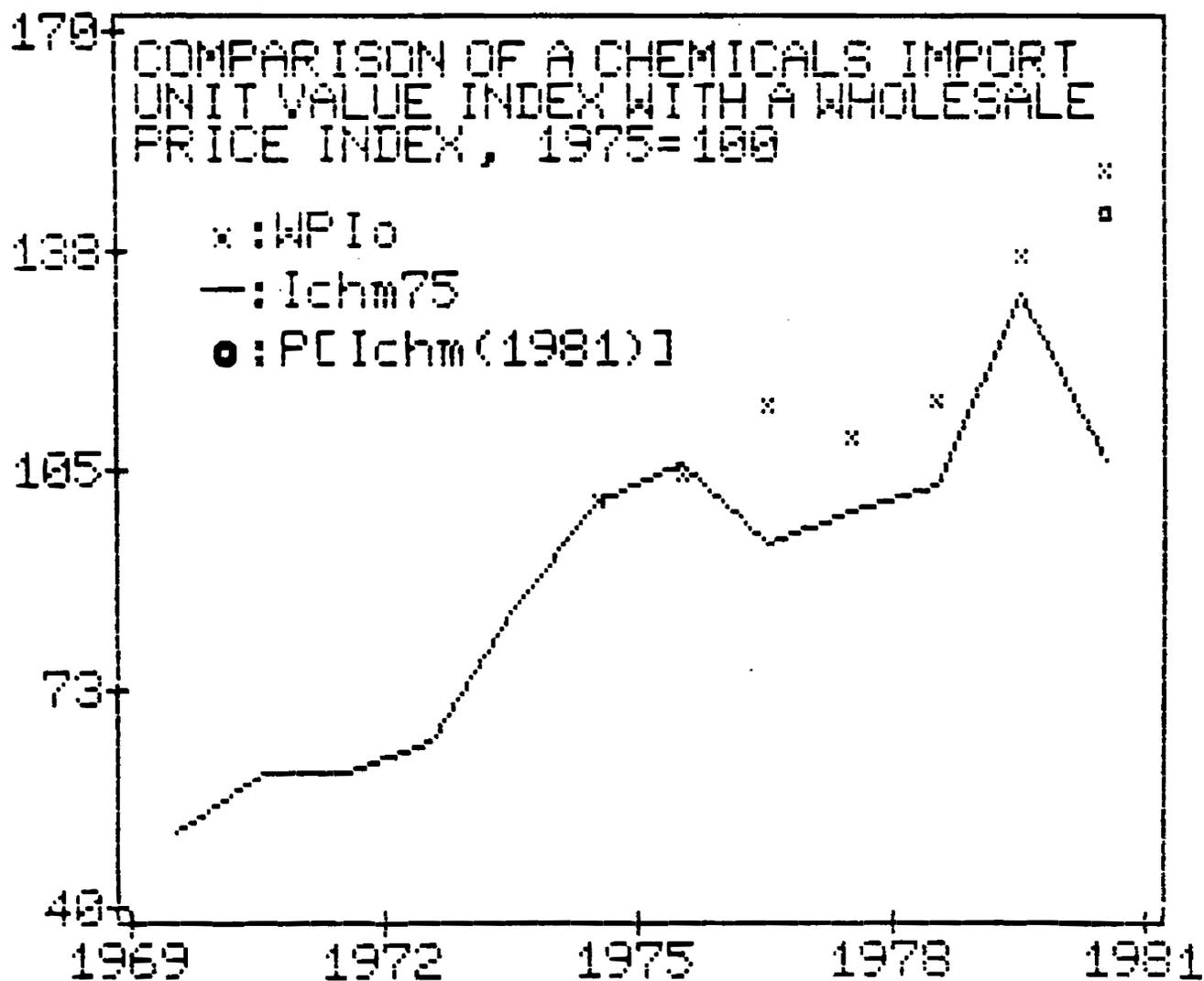
GRAPH 10.1: For Industrial Materials

COMPARISON OF 1975-BASED TRANSPORTATION AND FUEL INDICES

x : Itrp(1)
— : Idsl
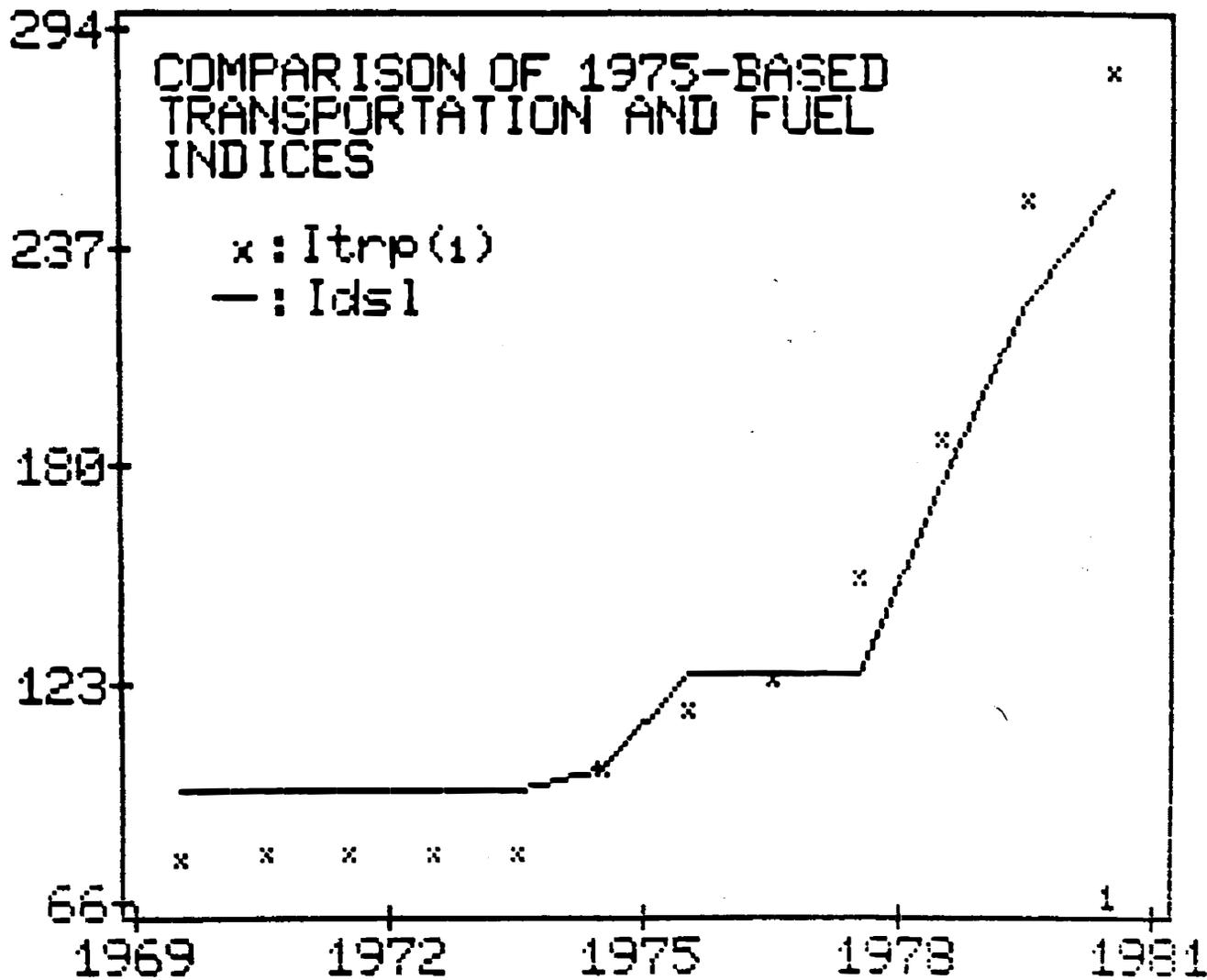
GRAPH 11.1: For Transportation

seen that both series from 1970-1974 remained virtually
constant over time. After 1974, however, transportation
prices began to grow at a faster annual rate than diesel
prices, thus only the 1975-1980 observations were used to
estimate the following model:

$$\text{Itrp}(t) = -20.6756 + 1.20492 * \text{Idsl}(t) + e(t)$$
$$(19.3348) \quad (0.1278)$$

t = [1975, 1980]   R-squared = 95.62E-2
                            DW = 2.30
                             N = 6
                             F = 88.84.

Inserting Idsl(1981) = 252.244 into the above regression
equation yielded P[Itrp(1981)] = 283.260. An examination
of the residuals did not suggest that the prediction should
be modified.

12. Electrical Power Index Construction Methodology

The only related series which could be located was a CPI of
fuel and light. To the extent that fuel and electricity
prices are in constant proportionality over time, the CPI
of fuel and light will approximately indicate the movement
of electricity prices. Given the dominance of fuel oil in
the generation of Jordan's electrical power, the CPI of
fuel and light seems to be a reasonable proxy. This index
was found in two pieces, each with a different base year.
DS-12.1 contains a 1967-based series for 1970-1976 and
DS-12.2 contains a 1975-based series for 1975-1981.

Step 1: Splicing the DS-12.1 and DS-12.2 Series

The only necessary step was to splice the DS-12.1 and
DS-12.2 series. To accomplish this, the base year of the
DS-12.1 series was changed from 1967 to 1975

Ifl75 =d FI[DS-12.1, 112.4, 1975].

Then the 1970-1974 observations of Ifl75 were used with the
1975-1981 DS-12.2 observations to obtain the final index.
For the one year common to both Ifl75 and the DS-12.2
series, 1976, the two series differed only by 0.3
percentage points.

13. Exchange Rates Construction Methodology

DS-13.1 contains U.S. dollars per dinar exchange rates for
1970-1981. Appendix 1 contains dinars per U.S. dollar
exchange rates which were constructed as

$$D\$(t) = d \left[1 \; / \; DS\text{-}13.1(t) \right] \qquad t = [1970, 1981].$$

APPENDIX 1

PHASE I INDICES

FINAL PHASE I INDICES FOR JORDAN

COUNTRY 1	SUBDIVISN 2	YEAR 3	PERIOD 4	MINEWAGE 5	CONSTWAGE 6	EQUIPARTS 7	BITSTEEL 8	TIMBER 9	FUEL 10
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	0.0000	1970.00	0.0000	53.9540	71.2487	58.3078	56.9798	48.4945	94.4091
511.000	0.0000	1971.00	0.0000	57.7229	73.4247	61.5145	50.4753	49.0805	94.4091
511.000	0.0000	1972.00	0.0000	61.1015	76.6535	63.1528	52.5490	54.0619	94.4091
511.000	0.0000	1973.00	0.0000	66.2222	82.2086	60.5603	73.9317	68.2732	94.4091
511.000	0.0000	1974.00	0.0000	33.8889	91.4110	73.9403	104.829	99.6262	94.4091
511.000	0.0000	1975.00	0.0000	100.000	100.000	100.000	100.000	100.000	100.000
511.000	0.0000	1976.00	0.0000	121.333	138.037	124.202	86.3591	99.4390	124.999
511.000	0.0000	1977.00	0.0000	130.667	182.822	133.477	84.0178	104.021	124.999
511.000	0.0000	1978.00	0.0000	145.333	209.202	136.046	92.3935	102.556	124.999
511.000	0.0000	1979.00	0.0000	144.444	221.472	147.864	100.463	110.370	174.999
511.000	0.0000	1980.00	0.0000	155.556	245.399	168.257	107.106	143.424	223.049
511.000	0.0000	1981.00	0.0000	167.267	279.040	204.450	129.326	161.160	252.244
511.000	0.0000	1982.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	0.0000	1983.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	0.0000	1984.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

FINAL PHASE I INDICES FOR JORDAN

COUNTRY 1	SUBDIVISN 2	YEAR 3	PERIOD 4	PYROTECH 11	TIRES 12	CONSTMATL 13	INDMATERL 14	TRANSPORT 15	ELECTRIC 16	EXCH.RATE 17
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	0.0000	1970.00	0.0000	29.3267	60.9668	70.3415	50.9225	77.0177	91.1032	0.3571
511.000	0.0000	1971.00	0.0000	29.9985	62.0658	67.4182	59.6924	77.8632	95.0178	0.3571
511.000	0.0000	1972.00	0.0000	35.9788	68.5507	71.6879	59.4343	78.3244	96.3523	0.3571
511.000	0.0000	1973.00	0.0000	41.0781	72.9804	84.2106	64.3273	79.7955	99.2883	0.3273
511.000	0.0000	1974.00	0.0000	92.6319	99.9486	100.000	84.5139	78.7955	100.000	0.3205
511.000	0.0000	1975.00	0.0000	100.000	100.000	100.000	100.000	100.000	100.000	0.3194
511.000	0.0000	1976.00	0.0000	91.6533	97.0652	124.400	105.931	115.700	106.700	0.3321
511.000	0.0000	1977.00	0.0000	89.2051	102.987	131.100	94.0435	124.700	107.100	0.3292
511.000	0.0000	1978.00	0.0000	53.6015	105.571	141.300	98.3335	150.600	115.300	0.3066
511.000	0.0000	1979.00	0.0000	72.7812	110.741	154.500	102.388	187.300	158.800	0.3006
511.000	0.0000	1980.00	0.0000	79.8739	127.049	188.900	130.893	249.600	198.000	0.2987
511.000	0.0000	1981.00	0.0000	99.5326	155.435	200.900	142.732	283.260	225.300	0.3262
511.000	0.0000	1982.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	0.0000	1983.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	0.0000	1984.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

APPENDIX 2

DATA SOURCE IDENTIFICATION SHEETS

DATA SOURCE IDENTIFICATION SHEET FOR DS - 1.1

Country/Code: Jordan/511

Index Relevance: Mining Wage

Record Set/Field Number: 2/13

Data Source Title: Yearbook of Labour Statistics

Publisher: International Labour Organization

Table Number/Title: 18/Wages in mining and quarrying

Item Title: Jordan

Units: Dinars per day

Base Period: _

Closest Year/Value (not 0 or 100) to 1975: 1975/2.25

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
1982/561	1973-1980/Annual	1973-1980/Annual

Notes: Employees, Adults
April of each year
1979=June

A2-2

phœnix

DATA SOURCE IDENTIFICATION SHEET FOR DS -1.2

Country/Code: Jordan/511

Index Relevance: Mining Wage

Record Set/Field Number: 1/7

Data Source Title: Yearbook of Industrial Statistics

Publisher: United Nations Statistical Office

Table Number/Title: 4/Wages and Salaries of Employees: Jordan

Item Title: Mining and quarrying

Units: Thousand dinars

Base Period: –

Closest Year/Value (not 0 or 100) to 1975: 1975/2823

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
Vol. I 1980/291	1976-1980/Annual	1976-1980/Annual
Vol. I 1976/321	1971, 1974, 1975/Annual	1971, 1974, 1975/Annual

Notes:

A2-3

DATA SOURCE IDENTIFICATION SHEET FOR DS - 1.3

Country/Code: Jordan/511

Index Relevance: Mining Wage

Record Set/Field Number: 1/6

Data Source Title: Yearbook of Industrial Statistics

Publisher: United Nations STatistical Office

Table Number/Title: 3/Average Number of Employees: Jordan

Item Title: Mining and quarrying

Units: Number

Base Period: _

Closest Year/Value (not 0 or 100) to 1975:   1975/2905

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
Vol. I 1980/291	1976-1980/Annual	1976-1980/Annual
Vol. I 1976/321	1971, 1974, 1975/Annual	1971, 1974, 1975/ Annual

Notes:

A2-4

phœnix

DATA SOURCE IDENTIFICATION SHEET FOR DS - 1 4

Country/Code: Jordan/511

Index Relevance: Mining Wage

Record Set/Field Number: 1/5

Data Source Title: International Financial Statistics Yearbook

Publisher: International Monetary Fund

Table Number/Title: -/Jordan

Item Title: Interest, Prices, Production: Consumer Prices

Units: _

Base Period: 1975

Closest Year/Value (not 0 or 100) to 1975:   1976/111.5

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
1982/274-275	1969-1981/Annual	1970-1981/Annual

Notes:

A2-5

DATA SOURCE IDENTIFICATION SHEET FOR DS - 2.1

Country/Code: Jordan/511

Index Relevance: Construction Wage

Record Set/Field Number: 1/8

Data Source Title: Yearbook of Labour Statistics

Publisher: International Labour Organization

Table Number/Title: 19/Wages in Construction

Item Title: Jordan

Units: Dinars per day

Base Period: ‑

Closest Year/Value (not 0 or 100) to 1975:   1975/1.63

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fre
1982/567	1973-1980/Annual	1973-1980/Annual

Notes: Earnings, Employees, Adults
April of each year
1970: June

A2-6

DATA SOURCE IDENTIFICATION SHEET FOR DS - 2.2

Country/Code: Jordan/511

Index Relevance: Construction Wage

Record Set/Field Number: 2/7

Data Source Title: Yearbook of Construction Statistics

Publisher: United Nations Statistical Office

Table Number/Title: -/Jordan

Item Title: Wages and salaries of employees

Units: million Dinars

Base Period: —

Closest Year/Value (not 0 or 100) to 1975: 1975/9.6

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
1973-1980/101	1973-1980/Annual	1973-1980/Annual
1969-1978/144	1972-1980/Annual	1972/Annual

Notes:

A2-7

DATA SOURCE IDENTIFICATION SHEET FOR DS - 2.3

Country/Code: Jordan/511

Index Relevance: Construction Wage

Record Set/Field Number: 2/6

Data Source Title: Yearbook of Construction Statistics

Publisher: United Nations Statistics Office

Table Number/Title: -/Jordan

Item Title: Number of persons engaged

Units: Number

Base Period: —

Closest Year/Value (not 0 or 100) to 1975:   1975/3614

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
1973-1980/101	1973-1980/Annual	1973-1980/Annual
1969-1978/144	1969-1978/Annual	1970-1972/Annual

Notes:

A2-8

DATA SOURCE IDENTIFICATION SHEET FOR DS - 3.1

Country/Code: Jordan/511

Index Relevance: Equipment

Record Set/Field Number: 1/10

Data Source Title: Monthly Statistical Bulletin

Publisher: Central Bank of Jordan

Table Number/Title: 32/Index Number of Imports According to S.I.T.C.

Item Title: Machinery and Transport Equipment: Unit Price

Units: Dinar-denominated

Base Period: 1969

Closest Year/Value (not 0 or 100) to 1975:   see page 2 of 2

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F:
April 1976/-	1970-1974/Annual	1970-1971/Annual

Notes:

A2- 9

DATA SOURCE IDENTIFICATION SHEET FOR DS - 3.1

Country/Code: Jordan/511

Index Relevance: Equipment

Record Set/Field Number: 1/10

Data Source Title: Annual Report

Publisher: Central Bank of Jordan

Table Number/Title: 36/Index Number of Imports According to S.I.T.C.

Item Title: Machinery and Transport Equipment: Unit Price

Units: Dinar-denominated

Base Period: 1969

Closest Year/Value (not 0 or 100) to 1975:   1975/207.71

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
1977/112	1972-1976/Annual	1972-1976/Annual

Notes:

A2-10

DATA SOURCE IDENTIFICATION SHEET FOR DS - 3.2

Country/Code: Jordan/511

Index Relevance: Equipment

Record Set/Field Number: 1/9

Data Source Title: Monthly Statistical Bulletin

Publisher: Central Bank of Jordan

Table Number/Title: 34/Index Number of Imports According to S.I.T.C.

Item Title: Machinery and Transport Equipment: Unit Price

Units: Dinar-denominated

Base Period: 1979

Closest Year/Value (not 0 or 100) to 1975: 1976/98.73

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
April 1983/-	1976-1981/Annual	1976-1981/Annual

Notes:

A2-11

phoenix

DATA SOURCE IDENTIFICATION SHEET FOR DS -3.3

Country/Code: Jordan/511

Index Relevance: Equipment

Record Set/Field Number: 1/13

Data Source Title: Development of Foreign Economic Indices

Publisher: Phoenix Associates, Inc. for the United States Bureau
of Mines

Table Number/Title: See Notes Below

Item Title: United States Export PPI for Mining Equipment

Units: United States dollar-denominated

Base Period: 1977, first quarter

Closest Year/Value (not 0 or 100) to 1975:   1975/78.3222

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fi
Peru/2	1970-1981/Annual	1970-1981/Annual

Notes: This index was constructed in the course of the Technical
Discussion of the construction of Peru's Equipment and
Repair Parts index.

A2-12

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DATA SOURCE IDENTIFICATION SHEET FOR DS -4.1__

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 1/29

Data Source Title: Statistical Yearbook

Publisher: Department of Statistics, Jordan

Table Number/Title: 134/Annual Average of Wholesale Prices by
                      Commodities in Amman During 1967-1974

Item Title: Iron bars 10 mm.

Units: Dinars per 10 mm.

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:   1974/136

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
1974/196	1967-1974/Annual	1970-1974/Annual
		(see notes)

Notes: This field also contains 12-month averages for 1977-1979.
         See DS-4.2, DS-4.3, and 4.4 for documentation of
         1977, 1978, and 1979 monthly data respectively.

A2-13

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.1

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 1/29

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Prices In Amman City

Item Title: Iron bars 10 mm

Units: dinar per 10 mm

Base Period: _

Closest Year/Value (not 0 or 100) to 1975:   January 1981/156

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
January 1981/14	1981/Monthly	1981/Monthly

Notes: January 1981 available.

A2-13a

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.2

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 3/4

Data Source Title: Consumer Price Index

Publisher: Department of Statistics , Jordan

Table Number/Title: 14/Annual Wholesale Prices in Amman City

Item Title: Iron bars 10 mm.

Units: Dinars per 10 mm.

Base Period: —

Closest Year/Value (not 0 or 100) to 1975:   January 1977/115.0

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
December 1977/19	1977/Monthly	1977/Monthly

Notes: January 1977-December 1977

A2-14

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.3__

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 3/5

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Prices In Amman City

Item Title: Iron bars 10 mm.

Units: Dinars per 10 mm.

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:   January 1978/104.0

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
December 1978/14	1978/Monthly	1978/Monthly

Notes: January 1978-December 1978

A2-15

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.4

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 3/6

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics , Jordan

Table Number/Title: 6/Average Wholesale Prices in Amman City

Item Title: Iron bars 10 mm.

Units: Dinars per 10 mm.

Base Period: _

Closest Year/Value (not 0 or 100) to 1975:   January 1979/104.0

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
December 1979/14	1979/Monthly	1979/Monthly

Notes: January 1979-December 1979

A2-16

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.5

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 2/31

Data Source Title: Statistical Yearbook

Publisher: Department of Statistics, Jordan

Table Number/Title: 134/Annual Average of Wholesale Prices by
                     Commodities in Amman During 1967-1974

Item Title: Iron angles and squares

Units: Dinars per ton

Base Period: _

Closest Year/Value (not 0 or 100) to 1975: 1974/135

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
1974/196	1967-1974/Annual	1970-1974/Annual
		(see notes)

Notes: This field also contains 12-month averages for 1977-1979.
         See DS-4.6, 4.7, and 4.8 for documentation of 1977, 1978,
         and 1979 monthly data respectively.

A2-17

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.5

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 2/31

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Prices in Amman City

Item Title: Iron angles and squares

Units: Dinars per ton

Base Period: _

Closest Year/Value (not 0 or 100) to 1975:   January 1981/210

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
January1981/14	1981/Monthly	1981/Monthly

Notes: Only January 1981 available.

A2-18

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.6

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 3/16

Data Source Title: Consumer Price Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 14/Annual Wholesale Prices in Amman City

Item Title: Iron angles and squares

Units: Dinars per ton

Base Period: -

Closest Year/Value (not 0 or 100) to 1975: January 1977/140

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
December 1977/ 20	1977/Monthly	1977/Monthly

Notes: January 1977-December 1977.

phoenix

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.7

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 3/17

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Prices In Amman City

Item Title: Iron angles and squares

Units: Dinar per ton

Base Period: -

Closest Year/Value (not 0 or 100) to 1975: January 1978/135

Volume/Page	Source Coverage/Freq.	DB Record Coverage/I
December 1978/14	1978/Monthly	1978/Monthly

Notes:

A2-20

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4 8

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 3/18

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Prices In Amman City

Item Title: Iron angles and squares

Units: Dinars per ton

Base Period: -

Closest Year/Value (not 0 or 100) to 1975: January 1979/135.0

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
December 1979/14	1979/Monthly	1979/Monthly

Notes: January 1979-December 1979

A2-21

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.9

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 2/32

Data Source Title: Statistical Yearbook

Publisher: Department of Statistics, Jordan

Table Number/Title: see notes/Imports Price Index by Commodity Group

Item Title: Metal Products

Units: —

Base Period: 1962

Closest Year/Value (not 0 or 100) to 1975:   1975/368

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F:
1975/224	1968-1974/Annual	1970/Annual
1976/226	1971-1975/Annual	. 1971-1975/Annual

Notes: 1975 Vol, Table 153; 1976 Vol, Table 157.

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.10

Country/Code: Jordan /511

Index Relevance: Steel

Record Set/Field Number: 2/33

Data Source Title: Statistical Yearbook

Publisher: Department of Statistics, Jordan

Table Number/Title: 155/Imports Price Index By Commodity Group

Item Title: Metal Products

Units: -

Base Period: 1972

Closest Year/Value (not 0 or 100) to 1975:   1975/225

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
1977/230	1972-1976/Annual	1972-1976/Annual

Notes:

DATA SOURCE IDENTIFICATION SHEET FOR DS - 4.11

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 2/8

Data Source Title: Printout of World Trade Data Base

Publisher: United Nations Statistical Office

Table Number/Title: Records for Jordan

Item Title: Imports S.I.T.C. 673.2, Value

Units: Thousand U.S. Dollars

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
--	1970-1981/Annual	1970-1981/Annual

Notes: For world as Partner. S.I.T.C. 673.2 corresponds to
          "Bars and rods of iron or steel; hollow mining drill
          steel".

DATA SOURCE IDENTIFICATION SHEET FOR DS -4.12

Country/Code: Jordan/511

Index Relevance: Steel

Record Set/Field Number: 2/9

Data Source Title: Printout of World Trade Data Base

Publisher: United Nations Statistical Office

Table Number/Title: Records for Jordan

Item Title: Imports S.I.T.C. 673.2,   Quantums

Units: Metric tonnes

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F:
--	1970-1981/Annual	1970-1981/Annual
.		

Notes: For world as Partner. S.I.T.C. 673.2 corresponds to
"Bars and rods of iron or steel; hollow mining drill
steel".

A2-25

DATA SOURCE IDENTIFICATION SHEET FOR DS -4.13

Country/Code: Jordan/511

Index Relevance: Drill Bits and Relate Steel

Record Set/Field Number: 2/34

Data Source Title: Development of Foreign Economic Indices

Publisher: Phoenix Associates, Inc. for the United States Bureau
of Mines

Table Number/Title: See Notes Below

Item Title: Japanese Export Price Index of Iron and Steel Products

Units: United States dollar-denominated

Base Period: 1975

Closest Year/Value (not 0 or 100) to 1975:   1976/96.4780

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
Thailand	1970-1981/Annual	1970-1981/Annual

Notes: This index was constructed in the course of the Technical
Discussion of the construction of Thailand's Bits and Rela
Steel index.

A2-26

DATA SOURCE IDENTIFICATION SHEET FOR DS - 5.1

Country/Code: Jordan/511

Index Relevance: Timber

Record Set/Field Number: 1/15

Data Source Title: Statistical Yearbook

Publisher: Department of Statistics, Jordan

Table Number/Title: 134/Annual Averages of Wholesale Prices By
Commodities in Amman During 1967-1974

Item Title: White timber

Units: Dinars per cubic meter

Base Period: _

Closest Year/Value (not 0 or 100) to 1975: 1974/68

Volume/Page	Source Coverage/Freq.	DB Record Coverage/I
1974/196	1967-1974/Annual	1970-1974/Annual
		(see notes)

Notes: This field also contains 12-month averages for 1977-1979.
See DS-5.2, DS-5.3, and DS-5.4 for documentation of 1977,
1978 and 1979 monthly data, respectively.

A2-27

DATA SOURCE IDENTIFICATION SHEET FOR DS -5.1

Country/Code: Jordan/511

Index Relevance: Timber

Record Set/Field Number: 1/15

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Prices in Amman City

Item Title: White timber

Units: Dinars per cubic meter

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:   see page 1 of 2

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
January 1981/14	1981/Monthly	1981/Annual

Notes: Only January 1981 available.

A2-28

DATA SOURCE IDENTIFICATION SHEET FOR DS -5.2

Country/Code: Jordan/511

Index Relevance: Timber

Record Set/Field Number: 3/8

Data Source Title: Consumer Price Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 14/Annual Wholesale Prices in Amman City

Item Title: White timber

Units: Dinars per cubic meter

Base Period: _

Closest Year/Value (not 0 or 100) to 1975: Jan 1977/72.0

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
December 1977/19	1977/Monthly	1977/Monthly

Notes: January 1977 - December 1977

A2-29

DATA SOURCE IDENTIFICATION SHEET FOR DS - 5.3

Country/Code: Jordan/511

Index Relevance: Timber

Record Set/Field Number: 3/9

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Prices in Amman City

Item Title: White timber

Units: Dinars per cubic meter

Base Period: _

Closest Year/Value (not 0 or 100) to 1975: Jan 1978/70.0

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
December 1978/14	1978/Monthly	1978/Monthly

Notes: January 1978 - December 1978

A2-30

DATA SOURCE IDENTIFICATION SHEET FOR DS -5.4

Country/Code: Jordan/511

Index Relevance: Timber

Record Set/Field Number: 3/10

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Prices in Amman City

Item Title: White timber

Units: Dinars per cubic metter

Base Period: _

Closest Year/Value (not 0 or 100) to 1975:   Jan 1979/70.0

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
December 1979/14	1979/Monthly	1979/Monthly

Notes: January 1979 - December 1979

A2-31

DATA SOURCE IDENTIFICATION SHEET FOR DS - 5.5

Country/Code: Jordan/511

Index Relevance: Timber

Record Set/Field Number: 1/19

Data Source Title: Annual Report

Publisher: Central Bank of Jordan

Table Number/Title: see notes/The Amman Wholesale Price Index

Item Title: Paper and Wood

Units: —

Base Period: 1975

Closest Year/Value (not 0 or 100) to 1975:   1976/99.4

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
1981/55	1977-1981/Annual	1977-1981/Annual
1977/62	1975-1977/Annual	1975-1976/Annual

Notes: 1981 Volume: Table Number 30
1977 Volume: Table Number 23

DATA SOURCE IDENTIFICATION SHEET FOR DS - 6.1

Country/Code: Jordan/511

Index Relevance: Fuel

Record Set/Field Number: 1/20

Data Source Title: World Road Statistics

Publisher: International Road Federation

Table Number/Title: VI/Motor Fuels

Item Title: Jordan; Diesel; Minimum price per litre

Units: see notes

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:   1975/4.0

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
1980/105	1975-1979/Annual	1975-1979/Annual
1972/104	1967-1971/Annual	1970-1971/Annual

Notes: Units for 1970-1971: U.S. cents per litre
        Units for 1975-1979: 1/100 of units of account (SDR) per l:

DATA SOURCE IDENTIFICATION SHEET FOR DS- 6.2

Country/Code: Jordan/511

Index Relevance: Fuel

Record Set/Field Number: 2/28

Data Source Title: Energia ed Idrocarburi

Publisher: Ente Nazionale Idrocarburi

Table Number/Title: See Notes/FOB List Prices for Main Petroleum
                                                Products in Certain Exporting Areas

Item Title: Gasolio 48-52 Diesel Index, Golfo Persico

Units: U.S. Cents per gallon

Base Period: -

Closest Year/Value to 1975: 1975/33.6

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Freq.
1981/100-101	1955,1960,1965-1980/ Annual	1970/Annual
1982/92-93	1955,1960,1965-1969, 1971-1981/Annual	1971-1981/Annual

Notes: 1981 Volume: Table Number 135C
            1982 Volume: Table Number 1.44

DATA SOURCE IDENTIFICATION SHEET FOR DS - 6.3

Country/Code: Jordan/511

Index Relevance: Fuels

Record Set/Field Number: 1/22

Data Source Title: Statistical Yearbook

Publisher: Department of Statistics

Table Number/Title: 134/Annual Average of Wholesale prices By Commod:
                     In Amman During 1967-1974

Item Title: Gas-oil

Units: Dinars per ton

Base Period: _

Closest Year/Value (not 0 or 100) to 1975:   1974/17.8

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
1974/196	1967-1974/Annual	1970-1974/Annual

Notes:

DATA SOURCE IDENTIFICATION SHEET FOR DS - 6.4

Country/Code: Jordan/511

Index Relevance: Fuel

Record Set/Field Number: 1/14

Data Source Title: International Financial Statistics Yearbook

Publisher: International Monetary Fund

Table Number/Title: -/Jordan: Exchange Rates

Item Title: Market Rate/Par or Central Rate, End of Period

Units: SDR's per Dinar

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:   1975/ 2.5790

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
1982/274-275	1952-1981/Annual	1970-1981/Annual

Notes:

DATA SOURCE IDENTIFICATION SHEET FOR DS - 7.1

Country/Code: Jordan/511

Index Relevance: Explosives

Record Set/Field Number: 2/19

Data Source Title: Yearbook of International Trade Statistics

Publisher: United Nations Statistical Office

Table Number/Title: see notes/Special Imports C.I.F. By Commodities
According to the S.I.T.C. (Rev 1) In
Thousand U.S. Dollars
Item Title: S.I.T.C. 561, Fertilizer Manufactured, Value

Units: Thousand U.S. Dollars

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:   1975/2235

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
Vol. I 1979/541	1975-1978/Annual	1975-1978/Annual
Vol. 1974/511	1971-1974/Annual	1971-1974/Annual
1972-1973/446	1970-1973/Annual	1970/Annual

Notes: 1979 Volumes: Table Number 4
1972, 1973, and 1974 Volume : Table Number 2
(Table Titles vary slightly by Volume)

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DATA SOURCE IDENTIFICATION SHEET FOR DS - 7 1

Country/Code: Jordan/511

Index Relevance: Explosives

Record Set/Field Number: 2/19

Data Source Title: Commodity Trade Statistics

Publisher: United Nations Statistical Office

Table Number/Title: -/Imports of Jordan

Item Title: S.I.T.C. 561, Fertilizers Manufactured, Value, World

Units: Thousand U.S. Dollars

Base Period: -

Closest Year/Value (not 0 or 100) to 1975: see page 1 of 2

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
Series D Vol. XXXI, No. 1-21 1981/130	1981/Annual	1981/Annual
Series D Vol. XXX, No. 1-18 1980/124	1980/Annual	1980/Annual
Series D Vol. - No. 1-20 1979/163	1979/Annual	1979/Annual

Notes: Table Title varies slightly by Volume

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DATA SOURCE IDENTIFICATION SHEET FOR DS - 7.2

Country/Code: Jordan/511

Index Relevance: Explosives

Record Set/Field Number: 2/18

Data Source Title: Yearbook of International Trade Statistics

Publisher: United Nations Statistical Office

Table Number/Title: see notes/Special Imports C.I.F. By Commodities
                        According to the S.I.T.C. (Rev. 1) in
                        Thousand U.S. Dollars
Item Title: S.I.T.C. 561, Fertilizers Manufactured, Weight

Units: Metric tonnes

Base Period: _

Closest Year/Value (not 0 or 100) to 1975:   1975/11200

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
Vol.I 1979/541	1975-1978/Annual	1975-1978/Annual
Vol.I 1974/511	1971-1974/Annual	1971-1974/Annual
1972-1973/446	1970-1973/Annual	1970/Annual

Notes: 1979 Volume: Table Number 4
            1974 Volumes: Table Number 2
            (Table Title vary slightly by Volume)

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DATA SOURCE IDENTIFICATION SHEET FOR DS -7 2

Country/Code: Jordan/511

Index Relevance: Explosives

Record Set/Field Number: 2/18

Data Source Title: Commodity Trade Statistics

Publisher: United Nations Statistical Office

Table Number/Title: -/Imports of Jordan

Item Title: S.I.T.C. 561, Fertilizers Manufactured, Quantity, World

Units: Metric tonnes

Base Period: _

Closest Year/Value (not 0 or 100) to 1975: see page 1 of 2

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
Series D Vol. XXXI, No. 1-21 1981/130	1981/Annual	1981/Annual
SeriesD Vol. XXX, No. 1-18 1980/124	1980/Annual	1980/Annual
Series D. Vol. - No. 1-20 1979/163	1979/Annual	1979/Annual

Notes: Table Title varies slightly by Volume.

DATA SOURCE IDENTIFICATION SHEET FOR DS -7.3

Country/Code: Jordan/511

Index Relevance: Explosives

Record Set/Field Number: 2/29

Data Source Title: International Financial Statistical Yearbook

Publisher: International Monetary Fund

Table Number/Title: Commodity Price Indices

Item Title: Urea, All origins

Units: U.S. Dollar-denominated

Base Period: 1975

Closest Year/Value (not 0 or 100) to 1975:   1976/56.5

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fi
1982/85	1957-1981/Annual	1970-1981/Annual

Notes: Pricing point: Europe

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DATA SOURCE IDENTIFICATION SHEET FOR DS - 8.1

Country/Code: Jordan/502

Index Relevance: Tires and Rubber

Record Set/Field Number: 1/25

Data Source Title: Development of Foreign Economic Indices

Publisher: Phoenix Associates, Inc. for the United States Bureau of Mines

Table Number/Title: See Notes Below

Item Title: Japan's Wholesale Price Index of Tires for Export

Units: U.S. dollar-denominated

Base Period: 1975

Closest Year/Value (not 0 or 100) to 1975: 1976/93.3755

Volume/Page	Source Coverage/Freq.	DB Record Coverage/
Thailand/18	1970-1981/Annual	1970-1981/Annual

Notes: This index was constructed in the course of the Technical Discussion outlining the construction methodology of Thailand's Tires and Rubber Index.

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DATA SOURCE IDENTIFICATION SHEET FOR DS - 9.1

Country/Code: Jordan/511

Index Relevance: Construction Materials

Record Set/Field Number: 1/28

Data Source Title: Annual Report

Publisher: Central Bank of Jordan

Table Number/Title: see notes/The Amman Wholesale Price Index

Item Title: Construction Materials

Units: •

Base Period: 1975

Closest Year/Value (not 0 or 100) to 1975:   1976/124.4

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F:
1981/55	1977-1981/Annual	1977-1981/Annual
1977/62	1975-1977/Annual	1975-1976/Annual

Notes: 1981 Volume: Table Number 30
         1977 Volume: Table Number 23

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DATA SOURCE IDENTIFICATION SHEET FOR DS -9.2

Country/Code: Jordan/511

Index Relevance: Construction Materials

Record Set/Field Number: 1/30

Data Source Title: Statistical Yearbook

Publisher: Department of Statistics, Jordan

Table Number/Title: 134/Annual Averages Of Wholesale Prices By
                         Commondities In Amman During 1967-1974

Item Title: Cement

Units: Dinars per ton

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:   1974/11.6

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F:
1974/196	1967-1974/Annual	1970-1974/Annual
		(see notes)

Notes: This field also contains 12-month averages for 1977-1979.
          See DS-9.3, DS-9.4, and DS-9.5 for documentation of 1977,
          1978 and 1979 monthly data, respectively.

A2-44

DATA SOURCE IDENTIFICATION SHEET FOR DS -9.3

Country/Code: Jordan/511

Index Relevance: Construction Materials

Record Set/Field Number: 3/12

Data Source Title: Consumer Price Index

Publisher: Department of Statistics , Jordan

Table Number/Title: 14/Annual Wholesale Prices In Amman City

Item Title: Cement

Units: Dinars per ton

Base Period: —

Closest Year/Value (not 0 or 100) to 1975: January 1977/18.0

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
December 1977/19	1977/Monthly	1977/Monthly

Notes: January 1977-December 1977

A2-45

DATA SOURCE IDENTIFICATION SHEET FOR DS - 9.4

Country/Code: Jordan/511

Index Relevance: Construction Materials

Record Set/Field Number: 3/13

Data Source Title: The Cost Of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Price In Amman City

Item Title: Cement

Units: Dinars per ton

Base Period: -

Closest Year/Value (not 0 or 100) to 1975: January 1978/19

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
December 1978/14	1978/Monthly	1978/Monthly

Notes: January 1978-December 1978

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DATA SOURCE IDENTIFICATION SHEET FOR DS -9.5

Country/Code: Jordan/511

Index Relevance: Construction Materials

Record Set/Field Number: 3/14

Data Source Title: The Cost Of Living Index

Publisher: Department of Statistics, Jordan

Table Number/Title: 6/Average Wholesale Price In Amman City

Item Title: Cement

Units: Dinars per ton

Base Period: —

Closest Year/Value (not 0 or 100) to 1975:   January 1979/23

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
December 1979/14	1979/Monthly	1979/Monthly

Notes: January 1979-December 1979

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DATA SOURCE IDENTIFICATION SHEET FOR DS - 10.1

Country/Code: Jordan/511

Index Relevance: Industrial Materials

Record Set/Field Number: 1/32

Data Source Title: Monthly Statistical Bulletin

Publisher: Central Bank of Jordan

Table Number/Title: 32/Index Number of Imports According to S.I.T.C.

Item Title: Chemicals, Unit Price

Units: Dinar-denominated

Base Period: 1969

Closest Year/Value (not 0 or 100) to 1975: see page 2 of 2

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
April 1976/-	1970-1974/Annual	1970-1971/Annual

Notes:

DATA SOURCE IDENTIFICATION SHEET FOR DS - 10.1

Country/Code: Jordan/511

Index Relevance: Industrial Materials

Record Set/Field Number: 1/32

Data Source Title: Annual Report

Publisher: Central Bank of Jordan

Table Number/Title: 36/Index Number of Imports According to S.I.T.C.

Item Title: Chemicals, Unit Price

Units: Dinar-denominated

Base Period: 1969

Closest Year/Value (not 0 or 100) to 1975:   1975/182.10

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
1977/112	1972-1976/Annual	1972-1976/Annual

Notes:

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DATA SOURCE IDENTIFICATION SHEET FOR DS -10.2_

Country/Code: Jordan/511

Index Relevance: Industrial Materials

Record Set/Field Number: 1/31

Data Source Title: Monthly Statistical Bulletin

Publisher: Central Bank of Jordan

Table Number/Title: 34/Index Number of Imports According to S.I.T.C.

Item Title: Chemicals, Unit Price

Units: Dinar-denominated

Base Period: 1979

Closest Year/Value (not 0 or 100) to 1975:   1976/103.46

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F:
April 1983/ -	1976-1981/Annual	1976-1981/Annual

Notes:

DATA SOURCE IDENTIFICATION SHEET FOR DS - 10.3

Country/Code: Jordan/511

Index Relevance: Industrial Materials

Record Set/Field Number: 2/30

Data Source Title: Annual Report

Publisher: Central Bank of Jordan

Table Number/Title: see notes/The Amman Wholesale Price Index

Item Title: Other

Units: -

Base Period: 1975

Closest Year/Value (not 0 or 100) to 1975:   1976/103.9

Volume/Page	Source Coverage/Freq.	DB. Record Coverage/I
1977/62	1975-1977/Annual	1975-1976/Annual
1981/55	1975,1977-1981/Annual	1977-1981/Annual

Notes: "Other" than foods, fuels, clothes and textiles,
Consumer Durables, paper and wood, construction
materials, pharmaceuticals, and transport equipment.

1981 Volume, Table 30; 1977 Volume, Table 23.

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DATA SOURCE IDENTIFICATION SHEET FOR DS -11.1

Country/Code: Jordan/511

Index Relevance: Transportation

Record Set/Field Number: 2/21

Data Source Title: Statistical Yearbook

Publisher: Department of Statistics, Jordan

Table Number/Title: 133/Consumer Price Index for Amman During
                      1968-1976

Item Title: Transportation

Units: -

Base Period: 1967

Closest Year/Value (not 0 or 100) to 1975:   1975/130.1

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
1976/197	1969-1976/Annual	1970-1976/Annual

Notes:

DATA SOURCE IDENTIFICATION SHEET FOR DS -11.2

Country/Code: Jordan/511

Index Relevance: Transportation

Record Set/Field Number: 2/20

Data Source Title: The Cost of Living Index

Publisher: Department of Statistics , Jordan

Table Number/Title: 1/The East Bank Cost of Living Index

Item Title: Transportation

Units: -

Base Period: 1975

Closest Year/Value (not 0 or 100) to 1975:   1976/115.7

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F₁
January 1981/-	1975-1981/Annual	1975-1980/Annual

Notes:

A2-53

DATA SOURCE IDENTIFICATION SHEET FOR DS - 12 1.

Country/Code: Jordan/511

Index Relevance: Electrical Power (Industrial)

Record Set/Field Number: 2/4

Data Source Title: Statistical Yearbook

Publisher: Department of Statistics, Jordan

Table Number/Title: 133/Consumer Price Index For Amman, During 1968-1

Item Title: Fuel and utilities

Units: _

Base Period: 1967

Closest Year/Value (not 0 or 100) to 1975: 1975/112.4

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
1976/197	1968-1976/Annual	1970-1976/Annual

Notes:

A2-54

DATA SOURCE IDENTIFICATION SHEET FOR DS - 12.2

Country/Code: Jordan/511

Index Relevance: Electrical Power (Industrial)

Record Set/Field Number: 2/5

Data Source Title: Yearbook of Labour Statistics

Publisher: International Labour Organization

Table Number/Title: 24/ Prices: Fuel and light indices

Item Title: Jordan

Units: _

Base Period: 1975

Closest Year/Value (not 0 or 100) to 1975: 1976/106.7

Volume/Page	Source Coverage/Freq.	DB Record Coverage/F
1982/611	1975-1981/Annual	1975-1981/Annual

Notes:

DATA SOURCE IDENTIFICATION SHEET FOR DS -13.1

Country/Code: Jordan/511

Index Relevance: Exchange Rate

Record Set/Field Number: 1/4

Data Source Title: International Financial Statistics Yearbook

Publisher: International Monetary Fund

Table Number/Title: -/Jordan

Item Title: Exchange Rates: Par Rate/Market Rate

Units: U.S. Dollars per Dinar, Annual Average

Base Period: -

Closest Year/Value (not 0 or 100) to 1975:   1975/3.1305

Volume/Page	Source Coverage/Freq.	DB Record Coverage/Fr
1982/274-275	1952-1981/Annual	1970-1981/Annual

Notes:

APPENDIX 3

PRIMARY DATA USED IN INDEX CONSTRUCTION

INDEX CONSTRUCTION FOR JORDAN
Listing of Records

COUNTRY	RECORDSET	YEAR	Field# 4:	Field# 5:	Field# 6:
Field# 7:	Field# 8:	Field# 9:	Field#10:	Field#11:	Field#12:
Field#13:	Field#14:	Field#15:	Field#16:	Field#17:	Field#18:
Field#19:	Field#20:	Field#21:	Field#22:	Field#23:	Field#24:
Field#25:	Field#26:	Field#27:	Field#28:	Field#29:	Field#30:
Field#31:	Field#32:	Field#33:	Field#34:	Field#35:	Field#36:

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

511.000	1.0000	1970.00	2.8000	59.6000	0.0000
0.0000	0.0000	0.0000	107.010	0.0000	90.9100
41.1969	2.8000	33.1000	63.0000	0.0000	121.000
0.0000	4.1000	0.0000	17.8000	112.000	0.0000
54.5303	1847.47	1654.19	0.0000	80.1000	10.7000
0.0000	92.7300	0.0000	99.5000	0.0000	0.0000

511.000	1.0000	1971.00	2.8000	62.7000	1892.00
734.000	0.0000	0.0000	133.770	0.0000	72.7300
43.0930	2.5790	33.5000	60.0000	0.0000	118.000
0.0000	4.1000	0.0000	17.8000	143.000	0.0000
55.5133	1533.26	1411.31	0.0000	70.8000	11.3000
0.0000	108.700	0.0000	88.7400	0.0000	0.0000

511.000	1.0000	1972.00	2.8000	67.3000	0.0000
0.0000	0.0000	0.0000	142.210	0.0000	81.8200
44.2407	2.5790	36.9000	69.0000	100.000	135.000
0.0000	0.0000	0.0000	17.8000	105.000	100.000
61.3135	2525.96	2143.94	0.0000	79.3000	11.6000
0.0000	108.230	0.0000	95.7700	0.0000	0.0000

511.000	1.0000	1973.00	3.0549	74.8000	0.0000
0.0000	1.3400	0.0000	157.990	0.0000	90.9100
46.2867	2.5192	46.6000	74.0000	111.000	150.000
0.0000	0.0000	0.0000	17.8000	112.000	107.000
71.2180	2832.50	2275.62	0.0000	101.600	11.6000
0.0000	117.140	0.0000	117.630	0.0000	0.0000

511.000	1.0000	1974.00	3.1198	89.3000	2397.00
1432.00	1.4900	0.0000	165.300	0.0000	115.460
57.7137	2.5929	68.0000	138.000	146.000	197.000
0.0000	0.0000	0.0000	17.8000	141.000	134.000
99.6070	5478.05	3120.81	0.0000	136.000	11.6000
0.0000	153.900	0.0000	141.870	0.0000	0.0000

511.000	1.0000	1975.00	3.1305	100.000	2905.00
2823.00	1.6300	0.0000	207.710	0.0000	156.910
78.3222	2.5790	0.0000	127.000	158.000	213.000
100.000	4.0000	100.000	0.0000	156.000	149.000
100.000	7617.63	3403.87	100.000	0.0000	0.0000
0.0000	182.100	0.0000	156.070	0.0000	0.0000

A3-2

INDEX CONSTRUCTION FOR JORDAN
Listing of Records

COUNTRY	RECORDSET	YEAR	Field# 4:	Field# 5:	Field# 6:
Field# 7:	Field# 8:	Field# 9:	Field#10:	Field#11:	Field#12:
Field#13:	Field#14:	Field#15:	Field#16:	Field#17:	Field#18:
Field#19:	Field#20:	Field#21:	Field#22:	Field#23:	Field#24:
Field#25:	Field#26:	Field#27:	Field#28:	Field#29:	Field#30:
Field#31:	Field#32:	Field#33:	Field#34:	Field#35:	Field#36:
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	1.0000	1976.00	3.0115	111.500	3206.00
2684.00	2.2500	98.7300	197.220	113.090	220.700
93.5800	2.5790	0.0000	151.000	191.000	0.0000
99.4000	5.0000	109.900	0.0000	0.0000	162.000
93.3755	10438.8	4693.19	124.400	0.0000	0.0000
103.460	192.900	130.860	137.030	0.0000	0.0000
511.000	1.0000	1977.00	3.0373	127.700	3342.00
3736.00	2.9800	98.8100	0.0000	106.960	0.0000
101.430	2.5790	71.0000	160.000	0.0000	0.0000
104.300	5.0000	115.200	0.0000	0.0000	0.0000
99.9211	13918.1	6116.21	131.100	110.167	18.1667
91.8500	0.0000	128.560	0.0000	0.0000	0.0000
511.000	1.0000	1978.00	3.2620	136.600	4010.00
5157.00	3.4100	97.4000	0.0000	97.8300	0.0000
111.030	2.5790	70.0000	162.000	0.0000	0.0000
112.200	5.0000	121.000	0.0000	0.0000	0.0000
110.006	12787.3	6494.71	141.300	104.000	22.0000
96.0400	0.0000	138.870	0.0000	0.0000	0.0000
511.000	1.0000	1979.00	3.3270	156.000	4248.00
7067.00	3.6100	100.000	0.0000	100.000	0.0000
123.080	2.5790	75.3333	192.000	0.0000	0.0000
118.300	7.0000	161.100	0.0000	0.0000	0.0000
117.692	20082.9	7647.82	154.500	121.167	23.0000
100.000	0.0000	100.000	0.0000	0.0000	0.0000
511.000	1.0000	1980.00	3.3478	173.300	5094.00
8860.00	4.0000	120.710	0.0000	107.960	0.0000
140.930	2.5790	0.0000	192.000	0.0000	0.0000
153.600	0.0000	299.700	0.0000	0.0000	0.0000
135.868	27053.7	8191.37	183.900	0.0000	0.0000
127.840	0.0000	128.460	0.0000	0.0000	0.0000
511.000	1.0000	1981.00	3.0654	194.200	0.0000
0.0000	0.0000	161.780	0.0000	123.410	0.0000
156.800	2.5790	110.000	235.000	0.0000	0.0000
172.600	0.0000	456.900	0.0000	0.0000	0.0000
152.203	0.0000	0.0000	200.900	156.000	0.0000
103.830	0.0000	131.150	0.0000	0.0000	0.0000

COUNTRY	RECORDSET	YEAR	Field# 4:	Field# 5:	Field# 6:
Field# 7:	Field# 8:	Field# 9:	Field#10:	Field#11:	Field#12:
Field#13:	Field#14:	Field#15:	Field#16:	Field#17:	Field#18:
Field#19:	Field#20:	Field#21:	Field#22:	Field#23:	Field#24:
Field#25:	Field#26:	Field#27:	Field#28:	Field#29:	Field#30:
Field#31:	Field#32:	Field#33:	Field#34:	Field#35:	Field#36:
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	1.0000	1982.00	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	1.0000	1983.00	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	1.0000	1984.00	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	2.0000	1970.00	102.400	0.0000	2580.00
0.0000	1696.10	11515.7	7.7000	0.0000	0.0000
0.0000	111.000	0.0000	38.3400	52.6800	11310.0
592.000	0.0000	100.200	125118.	30584.0	46763.0
16690.0	1598.00	72521.0	6.7000	24.4000	0.0000
83.5000	190.000	0.0000	55.8154	0.0000	0.0000
511.000	2.0000	1971.00	104.800	0.0000	1465.00
0.0000	596.080	4554.36	7.4000	0.0000	0.0000
0.0000	148.000	0.0000	82.5700	64.9700	12196.0
653.000	0.0000	101.300	108130.	20150.0	34961.0
24066.0	2475.00	55525.0	7.8000	23.3000	0.0000
73.7000	174.000	0.0000	55.2704	0.0000	0.0000
511.000	2.0000	1972.00	108.300	0.0000	1153.00
5.5000	2303.97	13041.1	9.2000	0.0000	0.0000
0.0000	111.000	100.000	395.980	523.870	8487.00
545.000	0.0000	101.700	183022.	24311.0	31994.0
34762.0	21806.0	115575.	8.0000	30.0000	0.0000
73.3000	163.000	100.000	62.9563	0.0000	0.0000

INDEX CONSTRUCTION FOR JORDAN
Listing of Records

COUNTRY	RECORDSET	YEAR	Field# 4:	Field# 5:	Field# 6:
Field# 7:	Field# 8:	Field# 9:	Field#10:	Field#11:	Field#12:
Field#13:	Field#14:	Field#15:	Field#16:	Field#17:	Field#18:
Field#19:	Field#20:	Field#21:	Field#22:	Field#23:	Field#24:
Field#25:	Field#26:	Field#27:	Field#28:	Field#29:	Field#30:
Field#31:	Field#32:	Field#33:	Field#34:	Field#35:	Field#36:

```
----------------------------------------------------------------
     0.0000       0.0000       0.0000       0.0000      0.0000       0.0000
     0.0000       0.0000       0.0000       0.0000      0.0000       0.0000
     0.0000       0.0000       0.0000       0.0000      0.0000       0.0000
     0.0000       0.0000       0.0000       0.0000      0.0000       0.0000
     0.0000       0.0000       0.0000       0.0000      0.0000       0.0000
     0.0000       0.0000       0.0000       0.0000      0.0000       0.0000
----------------------------------------------------------------

   511.000       2.0000    1973.00     111.600      0.0000      832.000
     9.1000    3545.27    15511.2       15.2000      0.0000        0.0000
     1.4900     114.000     103.000      79.3700     29.7800     9701.00
   776.000       0.0000     102.500   154029.      22427.0      29490.0
 26307.0     20120.0     74893.0        15.6000      47.9000       0.0000
   101.100     239.000     146.000      78.8564      0.0000        0.0000

   511.000       2.0000    1974.00     112.400      0.0000     3123.00
    10.0000    8316.83    22341.0       16.8000      0.0000        0.0000
     2.0000     126.000     113.000     411.680     318.250     5765.00
  1062.00       0.0000     102.500    49300.0     27192.0      38615.0
  3825.00    2185.00      492.000      31.2000     159.700       0.0000
   135.000     331.000     203.000     122.345      0.0000        0.0000

   511.000       2.0000    1975.00     112.400     100.000     3614.00
     9.6000    5642.56    20934.5       19.2000      0.0000        0.0000
     2.2500     416.000     374.000     989.380     579.370    11200.0
  2235.00     100.000     130.100    24160.0     17738.0      35442.0
  3938.00     233.000     126.000      33.6000     100.000      100.000
     0.0000     368.000     225.000     100.000      0.0000        0.0000

   511.000       2.0000    1976.00     119.600     106.700     4820.00
    15.0000   11232.2     44393.6       26.6000      0.0000        0.0000
     2.7300       0.0000     396.000     794.370     235.200     8787.00
  1546.00     115.700     146.600   429100.      1947.00      10382.0
  2058.00   337332.       888.000      33.6000      56.5000     103.900
     0.0000       0.0000     179.000      96.4780      0.0000        0.0000

   511.000       2.0000    1977.00       0.0000     107.100     4204.00
    16.0000   19000.9     84016.9       36.8000      0.0000        0.0000
     2.9400       0.0000       0.0000     854.300     334.810     3503.00
   605.000     124.700       0.0000   768110.      3444.00      5460.00
  3350.00   384845.     12562.0        36.5000      64.5000     114.400
   137.500       0.0000       0.0000     100.142      0.0000        0.0000

   511.000       2.0000    1978.00       0.0000     115.300     4544.00
    16.8000   15777.3     45272.3       51.0000      0.0000        0.0000
     3.2700       0.0000       0.0000     821.190     182.450    14544.0
  1621.00     150.600       0.0000    1.64123E6   1284.00      6647.00
  1275.00    1.21611E6   2256.00        38.8000      73.3000     109.800
   135.000       0.0000       0.0000     125.096      0.0000        0.0000
```

INDEX CONSTRUCTION FOR JORDAN
Listing of Records

COUNTRY	RECORDSET	YEAR	Field# 4:	Field# 5:	Field# 6:
Field# 7:	Field# 8:	Field# 9:	Field#10:	Field#11:	Field#12:
Field#13:	Field#14:	Field#15:	Field#16:	Field#17:	Field#18:
Field#19:	Field#20:	Field#21:	Field#22:	Field#23:	Field#24:
Field#25:	Field#26:	Field#27:	Field#28:	Field#29:	Field#30:
Field#31:	Field#32:	Field#33:	Field#34:	Field#35:	Field#36:
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	2.0000	1979.00	0.0000	158.800	3514.00
24.3000	45810.4	121128.	70.5000	70.5000	75.0000
3.2500	0.0000	0.0000	638.950	95.2300	21775.0
3361.00	187.300	0.0000	0.0000	6.0000	5596.00
134.000	921274.	0.0000	73.0000	87.5000	115.000
140.000	0.0000	0.0000	140.310	0.0000	0.0000
511.000	2.0000	1980.00	0.0000	198.000	5925.00
29.2000	30368.7	75340.6	97.5000	97.5000	0.0000
3.5000	0.0000	0.0000	985.950	380.750	19108.0
3257.00	249.600	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	104.000	112.400	137.100
0.0000	0.0000	0.0000	152.099	0.0000	0.0000
511.000	2.0000	1981.00	0.0000	225.300	0.0000
0.0000	530.290	1085.25	110.600	104.300	3.5000
0.0000	0.0000	0.0000	0.0000	0.0000	15055.0
2928.00	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	109.000	109.300	149.500
210.000	0.0000	0.0000	162.027	0.0000	0.0000
511.000	2.0000	1982.00	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	2.0000	1983.00	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	2.0000	1984.00	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INDEX CONSTRUCTION FOR JORDAN
Listing of Records

COUNTRY	RECORDSET	MONTH	Field# 4:	Field# 5:	Field# 6:
Field# 7:	Field# 8:	Field# 9:	Field#10:	Field#11:	Field#12:
Field#13:	Field#14:	Field#15:	Field#16:	Field#17:	Field#18:
Field#19:	Field#20:	Field#21:	Field#22:	Field#23:	Field#24:
Field#25:	Field#26:	Field#27:	Field#28:	Field#29:	Field#30:
Field#31:	Field#32:	Field#33:	Field#34:	Field#35:	Field#36:

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

511.000	3.0000	1.0000	115.000	104.000	104.000
154.000	72.0000	70.0000	70.0000	110.000	18.0000
19.0000	23.0000	28.1000	140.000	135.000	135.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

511.000	3.0000	2.0000	115.000	104.000	104.000
0.0000	72.0000	70.0000	70.0000	0.0000	18.0000
19.0000	23.0000	0.0000	140.000	135.000	135.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

511.000	3.0000	3.0000	115.000	104.000	104.000
0.0000	72.0000	70.0000	70.0000	0.0000	18.0000
19.0000	23.0000	0.0000	140.000	135.000	135.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

511.000	3.0000	4.0000	113.000	104.000	104.000
0.0000	72.0000	70.0000	70.0000	0.0000	18.0000
23.0000	23.0000	0.0000	140.000	135.000	135.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

511.000	3.0000	5.0000	113.000	104.000	104.000
0.0000	72.0000	70.0000	70.0000	0.0000	18.0000
23.0000	23.0000	0.0000	140.000	135.000	135.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

511.000	3.0000	6.0000	113.000	104.000	104.000
0.0000	72.0000	70.0000	70.0000	0.0000	18.0000
23.0000	23.0000	0.0000	140.000	135.000	135.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INDEX CONSTRUCTION FOR JORDAN
Listing of Records

COUNTRY	RECORDSET	MONTH	Field# 4:	Field# 5:	Field# 6:
Field# 7:	Field# 8:	Field# 9:	Field#10:	Field#11:	Field#12:
Field#13:	Field#14:	Field#15:	Field#16:	Field#17:	Field#18:
Field#19:	Field#20:	Field#21:	Field#22:	Field#23:	Field#24:
Field#25:	Field#26:	Field#27:	Field#28:	Field#29:	Field#30:
Field#31:	Field#32:	Field#33:	Field#34:	Field#35:	Field#36:
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	3.0000	7.0000	108.000	104.000	104.000
0.0000	70.0000	70.0000	70.0000	0.0000	18.0000
23.0000	23.0000	0.0000	135.000	135.000	135.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	3.0000	8.0000	108.000	104.000	104.000
0.0000	70.0000	70.0000	70.0000	0.0000	18.0000
23.0000	23.0000	0.0000	135.000	135.000	135.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	3.0000	9.0000	113.000	104.000	156.000
0.0000	70.0000	70.0000	86.0000	0.0000	18.0000
23.0000	23.0000	0.0000	135.000	135.000	155.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	3.0000	10.0000	103.000	104.000	156.000
0.0000	70.0000	70.0000	86.0000	0.0000	18.0000
23.0000	23.0000	0.0000	135.000	135.000	155.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	3.0000	11.0000	103.000	104.000	156.000
0.0000	70.0000	70.0000	86.0000	0.0000	19.0000
23.0000	23.0000	0.0000	135.000	135.000	155.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511.000	3.0000	12.0000	103.000	104.000	154.000
0.0000	70.0000	70.0000	86.0000	0.0000	19.0000
23.0000	23.0000	0.0000	135.000	135.000	135.000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000