Productivity Growth in Canada

Canada

Assessing the Data Quality of Statistics Canada's Productivity Program

by

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1.   Introduction

The production activity of an industry generates a variety of products using a combination of different inputs. The information about this production activity is recorded in great detail in the input-output tables. It is also synthesized in the KLEMS database.[1] This comprehensive database, which is highly integrated into the input-output tables, provides information by industry and over time on the primary inputs (capital and labour), the intermediate inputs (energy, materials and services) and output in terms of current and constant prices.

While the basic goal of this database is to allow for the construction of estimates of multifactor productivity, labour productivity and related measures (unit labour cost, implicit prices of output and inputs), it also has an enormous analytical potential, as illustrated by the content of the different chapters of the 2000 edition of *Productivity Growth in Canada* (Catalogue 15-204).

However, the level of detail shown by the KLEMS database is a necessary but not a sufficient condition for its relevance at the analytical level. An equally important consideration is the quality of the estimates of the variables that it contains. But evaluating the quality of the estimates is not a simple matter. In reality, the challenge of accurately assessing the quality of the estimates of the KLEMS database is in a way indicative of the difficult task that production theorists have set for economic statisticians. Much of the effort in conceptual and empirical research on the measurement of productivity, from Solow (1957) to Diewert (2000), has focussed almost exclusively on this task.

The present study, which supplements the analysis of the quality of productivity estimates that appears in Chapter 3 of *Productivity Growth in Canada* (Catalogue 15-204), has three objectives:

First, on the basis of a set of statistical criteria that are both intuitive and based on common sense, it reviews the different components of the KLEMS database at a highly detailed industry level and assigns them quality ratings.

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[1] The acronym 'KLEMS' designates the inputs capital (K), labour (L), energy (E), materials (M) and services (S).

Second, we use an error measurement device based on statistical inference. Just as a medical diagnosis is greatly enhanced by the use of a quantitative tool such as a thermometer, the quality evaluation process may be improved by the use of techniques based on statistical inference that are capable of estimating the extent to which the variables in the KLEMS database are affected by measurement errors.

Third, this article looks at the extent to which the estimates in the KLEMS database are revised.[2] Using measures of bias and dispersion of the estimates, we quantify the quality of the preliminary estimates regularly produced by Statistics Canada's productivity program.

In addition to serving as a guide to users of productivity data[3], this study also reflects the importance that Statistics Canada assigns to the quality of statistical information. This commitment to data quality is reflected in ongoing efforts to improve the reliability of the estimates produced so as to provide a top-quality product more cost-effectively. The third edition of the *Statistics Canada Quality Guidelines* (1998, 74-75) (Catalogue 12-539-XIE) describes the concept of quality as follows:

> *'Statistics Canada strives to build quality into all its programs and products. The quality of its official statistics is founded on the use of sound scientific methods, adapted over time to changing client needs, to budgetary circumstances, and to the changing reality that is the object of measurement. A concern for, and pride in, quality must be shared by employees and managers at all levels in Statistics Canada. Acceptable quality is not achieved by managerial actions, edicts and checks. It is achieved through understanding client needs and the sound application of knowledge and expertise at many levels.'*

Improving the quality of the estimates is a dynamic process. Despite the relevance of its productivity program and the major efforts made in recent years to bring the estimates of the KLEMS database in line with the economic literature principles, Statistics Canada recognizes that there is room for further improvement.

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[2] Revisions result from the following: 1) preliminary data are replaced by revised and more complete data; 2) changes are made to sources, concepts and methods, and 3) projections are replaced by more reliable estimates. For further details, see Chapter 3 of the 2000 edition of *Productivity Growth in Canada* (Catalogue 15-204).

[3] The methodological appendices 1 and 2 of the productivity program published in *Productivity Growth in Canada* (Catalogue 15-204) are complementary to this guide on data quality.

2.   Methodologies for evaluating the KLEMS database

2.1.   The General approach

In his work entitled *On the Accuracy of Economic Observation*s, published in 1950, Oscar Morgenstern showed that generally accepted statistics often have a sizeable error component. Just as in the natural sciences, Morgenstern suggests, it is impossible to obtain statistics that are absolutely accurate and certain. More than three decades later, despite developments in the methods of collecting, processing and analysing statistical information, Griliches (1986) confirmed that Morgenstern's observations were still valid.

If measurement error is inevitable for a host of reasons, then the statistician's objective is to minimize it, to ensure that it is constant (not systematic) both over time and cross-sectionally and, to make the public aware of it.

Measurement error, or the quality of the estimates, is generally not an easy task.[4] We therefore propose two ways to assess quality: the first, based on common sense, yields ordinal quality ratings; the second, based on statistical inference, yields a measurable approximation of measurement error. Each of these evaluations will be examined at the detailed level (for each of the variables and by industry) and then at a more aggregated level.

2.2.   Evaluation based on judgement

2.2.1. Ratings and quality criteria

Each variable in the KLEMS database will receive one of the following ratings:

  1 – the quality is reliable;
  2 – the quality is fairly reliable;
  3 – the quality is unreliable.

Productivity measures are based on estimates of output and combined inputs. It follows that the quality of the productivity estimates depends on the quality of the estimates of both output and inputs. But this is not all. This logical criterion is supplemented by an

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[4] Furthermore, the accuracy of the estimates is only one component of quality for Statistics Canada :
'The quality of statistical information is multidimensional. Quality embraces not only the attribute of relevance, but also the characteristics of accuracy, timeliness, accessibility, interpretability and coherence. Within and across statistical programs and products, quality also incorporates characteristics of consistency, compatibility and completeness. Each statistical product is itself multidimensional, containing a range of information that may vary in quality and serve many data uses. Across statistical programs there are differing objectives, priorities, constraints and opportunities, and thus differing quality characteristics.' (Statistics Canada 1998, p. 74, Catalogue 12-539-XIE)

element of common sense: in the long run, industries are generally not likely to have a negative multifactor productivity growth rate.[5]

The quality ratings listed above are based on three criteria: the quality of the data sources including deflators; the nature of breaks in the series; and the volatility of the series. The combination of these criteria should be considered as a necessary condition for quality; however, no criterion on its own can be a sufficient condition for quality.

A)   Quality of data sources and deflators

A variable cannot receive rating 1 (reliable) if:

i)   the series in current prices are unreliable (no surveys or administrative sources) because they are based on imputed data; and/or

ii)   the variable has no appropriate deflator for constructing a reliable series in constant prices.

If the series look "reasonable" despite weaknesses i) and ii) above, it would be given a 2 (fairly reliable) rating. Otherwise, it would be considered unreliable (3) by default. We paid particular attention to industries in which the indices of real output and labour input look almost identical. This could indicate that the labour series were used to generate the output series, with or without productivity gains being introduced artificially.

B) Breaks in the series

Breaks in the series may be either temporary or permanent, and they may result from various phenomena. A few examples are: macroeconomic or industry-specific shocks whose impact is temporary or permanent; changes associated with the environment within which the industry operates (regulation, etc.); and changes associated with the statistical infrastructure (classification; sources, concepts and methods).

If breaks that affect the series are explicable—in other words, if they are covered by one of the above examples—then the series could receive rating 1 (provided the other quality criteria are satisfied). Also, we document specific shocks because they are not generally known to the public (e.g., the fishing moratorium in 1990).

If the breaks are not explicable, the series cannot obtain rating 1.

C)   Volatility in the series

Does the change in the volatility of series over time suggest a change in cyclical fluctuations or a change in data estimation methods? This question, long debated by economists when studying pre-war and post-war series (see Balke and Gordon 1989), is difficult to resolve. But economists seem to have reached a consensus on one thing: the cyclical fluctuations have been greater since 1973. We therefore expect that the series

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[5] Heterogeneity and shifting weights may cause measured productivity to decline.

will show more volatility during the period from 1973 to the present compared with the pre-1973 period, but not the reverse.

We should also expect that, in general, estimates of capital would be less volatile than labour estimates. Capital is conceptually a stock, therefore, it changes sluggishly. However, there are times where investment shows discrete changes and, as a result, we might expect to see substantial changes in capital stock.

2.2.2   Quality at different aggregation levels

The evaluation will focus on all the variables in the KLEMS database at different levels of aggregation: by industry and by type of input (combined KLEMS or combined KL):

A)   At the disaggregated level

We evaluate the quality of the following series:

a)   series of Fisher volume indices for capital, labour, energy, materials, services and output;
b)   current price series (in level) on capital compensation, labour compensation and the cost of energy, materials and services. These variables will be used to estimate the nominal value of output (gross output and value added);
c)   series on multifactor productivity indices, labour productivity indices and related variables (e.g., unit cost of labour).

B)   At the more aggregated level

a)   KLEMS or KL inputs combined

We have also rated the inputs K and L combined and, all the input series KLEMS combined. To obtain the rating for KL and KLEMS combined, the individual ratings for each of the input series are weighted using the average cost share of each input for the period 1961-1996. The resulting rating will be rounded to the nearest integer.

b)   Multifactor productivity

The multifactor productivity rating is derived by combining the rating assigned to the output and the combined inputs. In particular, for the sake of conservatism in the assessment of the estimates, the multifactor productivity rating is obtained by choosing the maximum of the output Fisher index (gross output or value added) and the combined inputs (KLEMS or KL) ratings previously obtained. For example, if the rating for the Fisher index for value added is 1 and the rating for the combined KL input is 2, then the rating attributable to multifactor productivity would be, by default, 2. The ratings obtained for multifactor productivity from the standpoint of value added or gross output should generally be consistent.[6]

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[6] However, it should be expected that estimates of value added in constant prices will be of lesser quality than estimates of gross output. A large body of the economic literature suggests that real value added, based on the double deflation method, is based on restrictive hypotheses.

It goes without saying that in general, the rating assigned to estimates of multifactor productivity should be consistent with the essence of the concept of multifactor productivity—namely, that it is a measure of long-term technical progress. Our approach, if it is reliable, should generally yield the following result: industries that are not in decline, where internal shifts are not occurring, and whose productivity estimates are well-rated should, theoretically, show an average annual productivity growth rate that is neither negative nor anaemic throughout the entire historical period (1961-1996) or two consecutive business cycles (peak to peak in the business cycle).

c) *Aggregation of industries*
The quality ratings at the P level (or L)[7] are then aggregated to the levels M and S using weights based on the value of output in current dollars of each industry at the P (or L) level. An improvement in the quality rating should be observed when the ratings are aggregated as errors tend generally to cancel out.

2.2.3. Results

The quality ratings 1 (acceptable), 2 (fairly acceptable) and 3 (unacceptable) assigned to the components of the KLEMS database at different levels of aggregation are shown in the appendix of this paper. The results discussed in this section, based on the information shown in the appendix, are limited to capital,[8] labour, value added and multifactor productivity, at aggregation levels P, M and S[9].

At the P level of aggregation, 90% of the industries (i.e. 110 industries) in the business sector have labour estimates of acceptable quality, compared to 74% (90 industries) for value added and only 27% (33 industries) for capital (Chart 1). One industry out of two has multifactor productivity estimates that are of acceptable quality. At the other extreme, only 8% of industries have unacceptable estimates of value added and multifactor productivity, compared to almost ¼ of industries for capital. On the other hand, no industry has unacceptable estimates for labour.

While interesting in their own right, these results are not necessarily representative, as they are not weighted by the output share of each industry in the business sector. Chart 2, which weights the results of Chart 1 by the relative share of each industry,[10] shows that almost 100% of the business sector posts an acceptable rating for labour, compared to 59% for value added. On the other hand, only 39% of this sector has an acceptable rating for capital. As a result, just under half of the business sector has multifactor productivity estimates with an acceptable rating.

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[7] See Appendix 2 of *Productivity Growth in Canada* (Catalogue 15-204) which describes the different levels of aggregation used by the productivity program.
[8] At the time this paper was written the KLEMS database was still using the truncated geometric capital stock produced by the Investment and Capital Stock Division of Statistics Canada.
[9] These different levels of aggregation include 122, 46 and 16 industries respectively.
[10] The quality ratings for capital, labour, value added and multifactor productivity were weighted, respectively, by each industry's share in terms of return on capital, labour and value added.

Chart 1. Distribution of Industries by Quality Ratings at the P Level of Aggregation (Number of Industries)

Legend:
- Rating 1 (reliable)
- Rating 2 (moderately reliable)
- Rating 3 (unreliable)

Note: The P level of aggregation contains 122

Y-axis: Number of Industries

Capital: 33, 60, 29
Labour: 110, 12, 0
Value Added: 90, 22, 10
Multifactor Productivity: 64, 45, 13
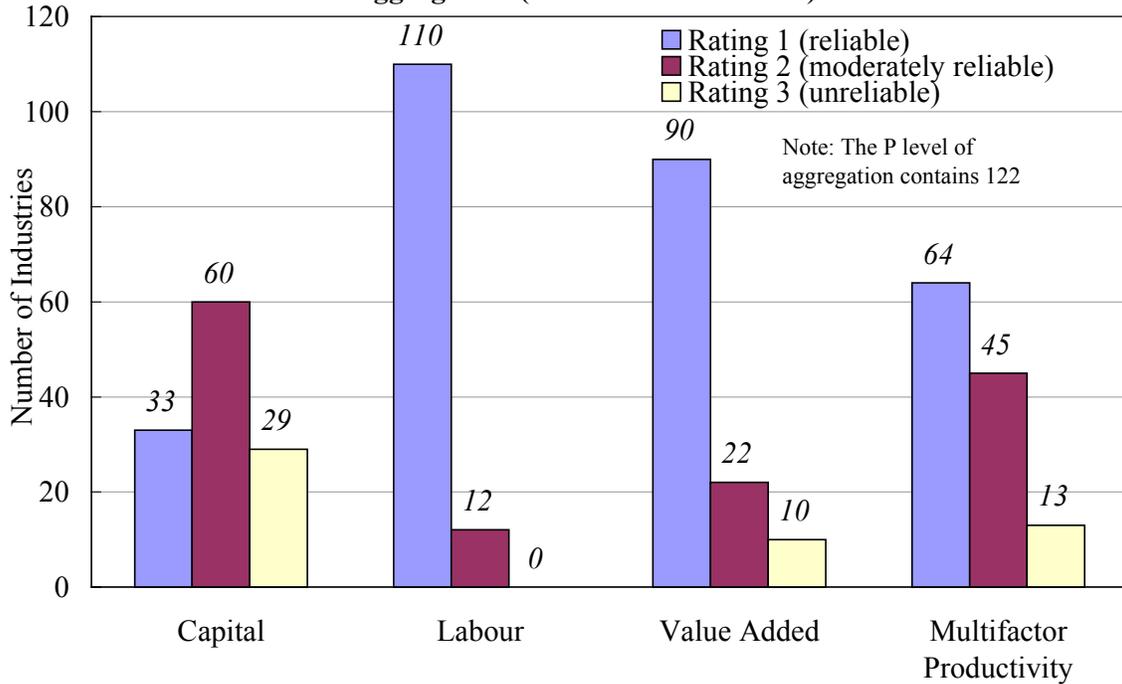
Chart 2. Distribution of Industries by Quality Ratings at the P Level of Aggregation (Percentages)

Legend:
- Rating 1 (reliable)
- Rating 2 (moderately reliable)
- Rating 3 (unreliable)

Note: The P level of aggregation contains 122

Y-axis: Weighted Percentages

Capital: 39, 25, 36
Labour: 98, 2, 0
Value Added: 59, 18, 24
Multifactor Productivity: 48, 24, 28
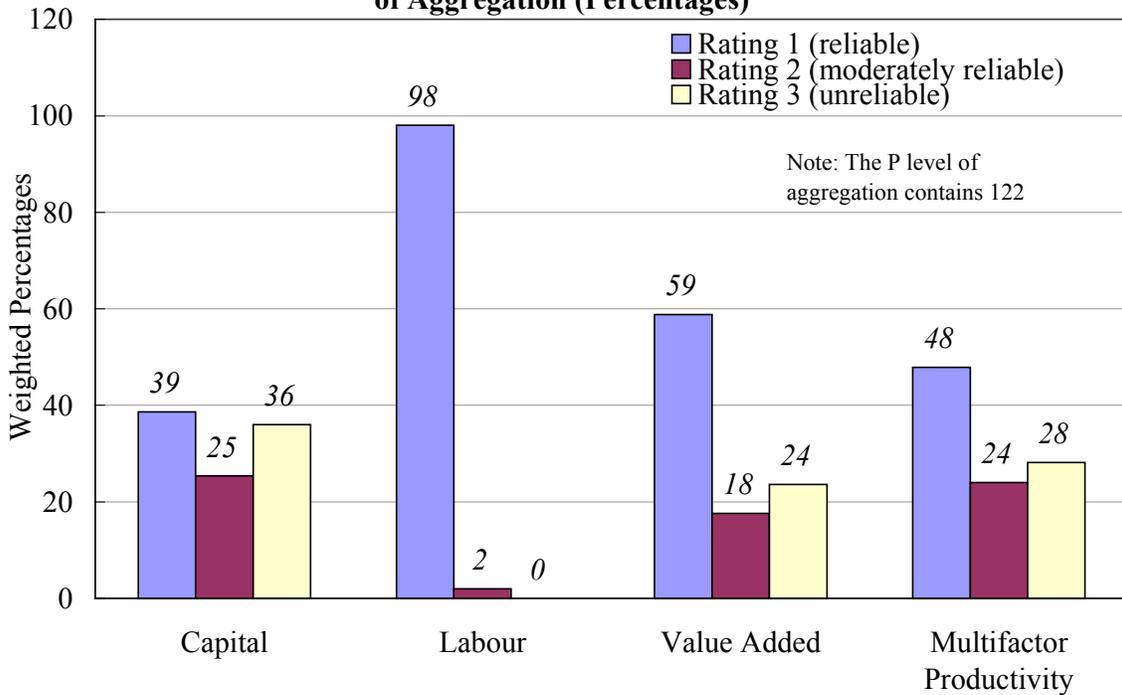
It is interesting in this regard to ask whether in general, the quality ratings assigned to multifactor productivity (using the ratings assigned to capital, labour and value added) are consistent with the viewpoint that an industry that is not in decline should in the long run post a positive multifactor productivity productivity growth rate.[11] Overall, our results confirm this hypothesis. Chart 3 shows that the industries that received rating 1 for their multifactor productivity estimates are those that post the highest multifactor productivity (weighted) average annual growth rate for the period 1961-1996 (1.05%). This growth rate falls to 0.38% for industries with a multifactor productivity rating of 2 and deteriorates (-.21%) for those with a rating of 3.

Chart 3. Multifactor Productivity Average Annual Growth Rates for Different Quality Ratings (Percentages)

Note: These estimates are the weighted sum of average annual growth rates of subsets of the 122 industries at the P level of aggregation.
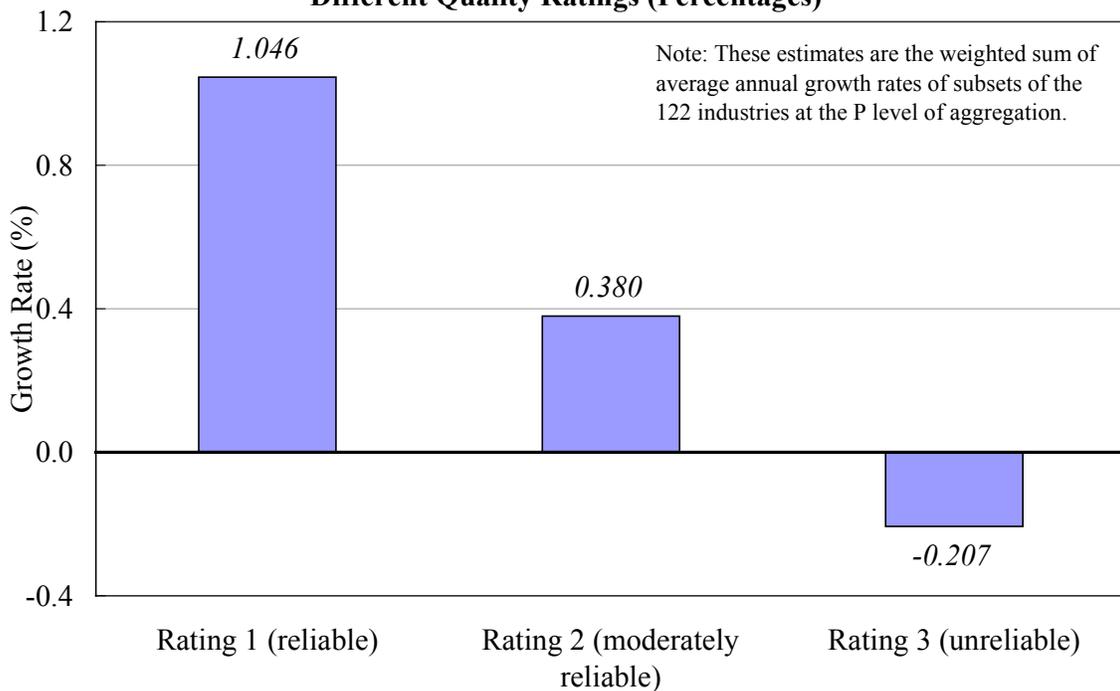
However, this does not mean that all industries in the business sector with an acceptable quality rating for the multifactor productivity estimates exhibit positive and non-anaemic long-term productivity growth. Industries such as printing and publishing, fish products and urban, interurban and rural transit systems are an exception to this rule.

Aggregation at the industry level tends to improve the quality of the estimates. The percentage of the business sector that exhibits acceptable ratings generally increases as the aggregation level rises from P to M and S (Charts 4 and 5). Between levels P and M, for example, the percentage of the business sector that exhibits an acceptable quality rating rises substantially for labour, value added and multifactor productivity. But there is an exception to this rule. The percentage of the business sector that had acceptable or unacceptable ratings for capital decreased, while the percentage with a fairly acceptable rating rose.

Chart 4. Distribution of Industries by Quality Ratings at the M Level of Aggregation (Percentages)

Note: The M level of aggregation contains 47

- Rating 1 (reliable)
- Rating 2 (moderately reliable)
- Rating 3 (unreliable)

Capital: 37, 28, 34
Labour: 99, 1, 0
Value Added: 61, 15, 23
Multifactor Productivity: 51, 21, 28
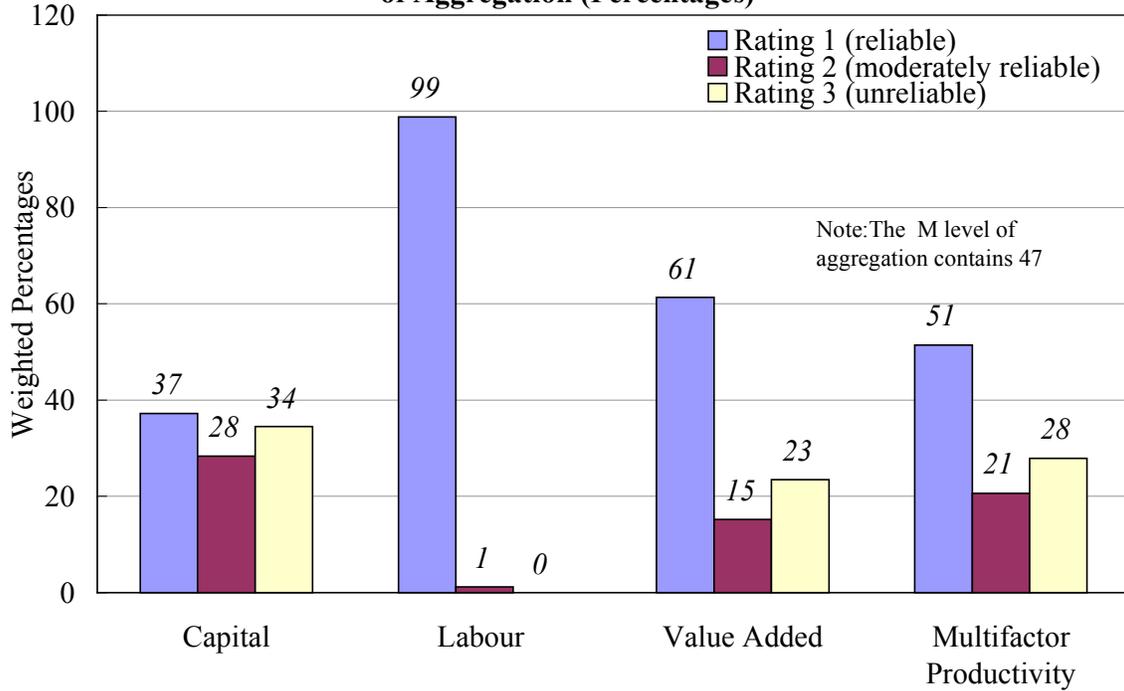
Chart 5. Distribution of Industries by Quality Ratings at the S Level of Aggregation (Percentages)

Note: The S level of aggregation contains 16 industries.

- Rating 1 (reliable)
- Rating 2 (moderately reliable)
- Rating 3 (unreliable)

Capital: 34, 32, 34
Labour: 100, 0, 0
Value Added: 61, 16, 23
Multifactor Productivity: 53, 17, 31

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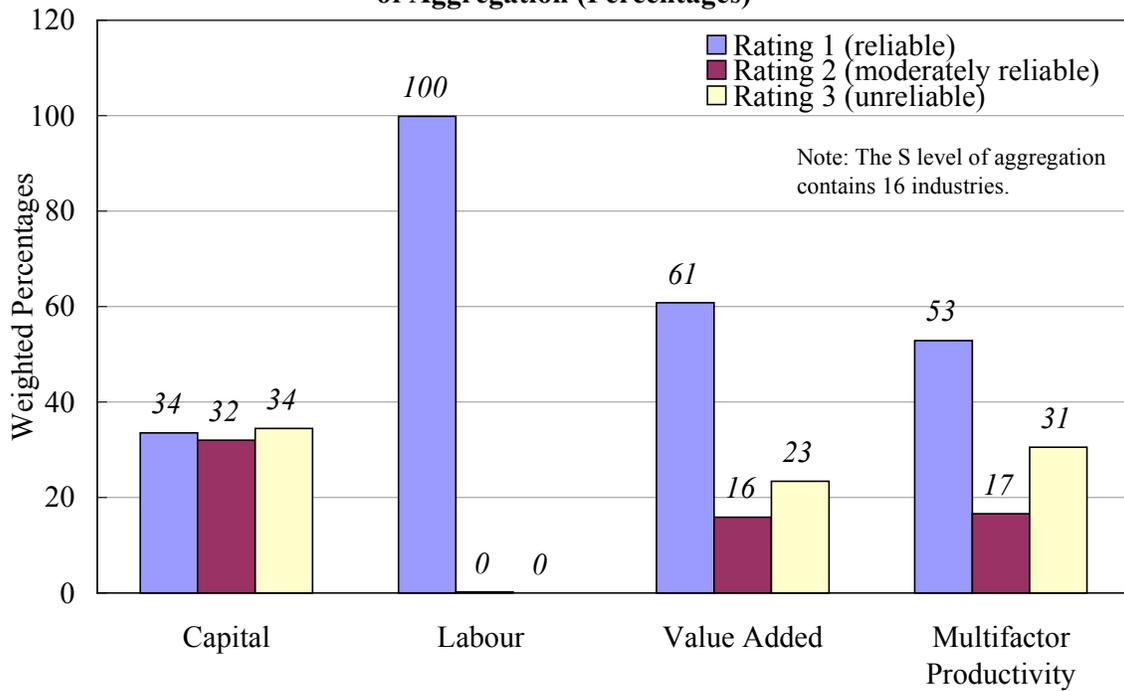
2.3. Evaluation based on statistical inference

A) Formulation of the approach

The second approach to evaluating the quality of estimates is parametric and it is formulated as follows. The variable x_{it}, which represents the KLEMS series, can be formalized as

$$x_{it} = z_{it} + \varepsilon_{it},$$ (1)

where z_{it} is the true value of x_{it} but is unknown and ε_{it} is the measurement error; subscripts $i = 1, 2, .., I$ and $t = 1, 2, .., T$ designate the industry and year respectively. The degree to which the true value z_{it} is affected by error ε_{it} may be measured as follows:

$$\xi_e^2 \equiv \frac{\sigma_\varepsilon^2}{\sigma_x^2},$$ (2)

that is, the ratio of the variances of ε_{it} and x_{it}.

It is not easy to estimate ξ_e^2 exactly; however, its upper bound can be measured. A systematic way to proceed is to use an ARMA model for the variable x_{it} (see Pierce *et al.* 1981). If R_s^2 is defined as $1 - R^2$, where R^2 is the coefficient of determination (corrected for degrees of freedom) of the ARMA model, then R_s^2 is asymptotically the upper limit of ξ_e^2. This approach, which enables us to produce estimates of ξ_e^2, will be used, for example, to evaluate the upper bound of the measurement error that affects the capital, labour, value added and multifactor productivity series.

B) Results

Table 1 contains the descriptive statistics for the upper bound of the measurement error ξ_e^2 at the aggregate level P. The estimate of ξ_e^2 is also aggregated to the higher levels M and S. Qualitatively, the results generally confirm those obtained previously in section 2.2.3. The upper bound of the measurement error for capital is the highest, with a median of 0.56, followed by value added with 0.35 and labour with 0.20. The median of the measurement error for multifactor productivity at the P level is 0.28. The median of this error tends to decrease at the aggregation levels M (0.24) and S (0.19). This result, which holds true for capital, labour and value added, does not alter the order of these variables in terms of quality. Capital exhibits the highest error measurement bound, followed by value added and labour.

Table 1. Descriptive Statistics for the Upper Limit of
Error Measurement ξ_e^2 at Aggregation Level P

	Capital	Labour	Value added	Multifactor productivity
Maximum	0.71	0.35	0.62	0.61
Minimum	0.33	0.22	0.28	0.31
Median	0.56	0.20	0.35	0.28
Standard deviation	0.63	0.26	0.51	0.39

3. The Quality of the Preliminary Estimates

3.1. Overview

It is well known that data published by Statistics Canada undergo a process of revision as new information comes to light. The Bureau typically has to balance the need for timeliness, which relates to pressures for information on the performance of the economy to be made available as quickly as possible, with the knowledge that the process of data gathering itself takes time. This results in the availability of several vintages of observations relating to a specific time period. Therefore, it is not surprising that the nature of revisions has been studied to see if, for example, (a) the earliest published preliminary data are an unbiased predictor of subsequent vintages of the same series; (b) whether preliminary vintages can be regarded as efficient forecasts of other vintages of the same series; and (c) if time series models are sensitive to the use of data from different vintages. Zellner (1958) and Morgenstern (1950) were amongst the earliest studies in the general area of data revisions, and more recent studies on GDP revisions include those by Harvey *et al.* (1983), Mankiw *et al.* (1984), and Mork (1987).

This section examines the record of revisions in the annual estimates of output, inputs and multifactor productivity for the 1995-1997 period in order to gain insights into the quality of the regular annual estimates produced by Statistics Canada's productivity program. We also discuss the reliability of the successive estimates and whether revisions in the most recent years show signs of either increasing or decreasing in size.[12]

3.1. Assessing the Revisions

As an introduction, Chart 6 shows the annual estimates of multifactor productivity growth rate for the period 1995-1996. For each year, the chart shows the first and each successive estimate.[13] It is useful to examine the chart in light of the following question:

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[12] The analysis is performed at the P level of aggregation.

[13] Annual multifactor productivity estimates are generally prepared on a schedule that calls for three successive estimates: "preliminary", "revised" and "final". The preliminary estimate is prepared about 4 years after the end of the reference year. In the following year, the revised estimates are prepared using revised primary source data. Subsequent estimates (final) use updates to labour data as the result of Census releases and Labour Force Survey historical revisions.

Do the preliminary estimates provide a reliable indication of the direction in which the economic performance of the business sector is moving? From Chart 6, one can see that the different vintages of the estimates indicate positive growth for 1995 and negative growth for 1996.

Chart 6. Multifactor Productivity Annual Growth Rates Based on Different Vintages of the Data (Percentages)
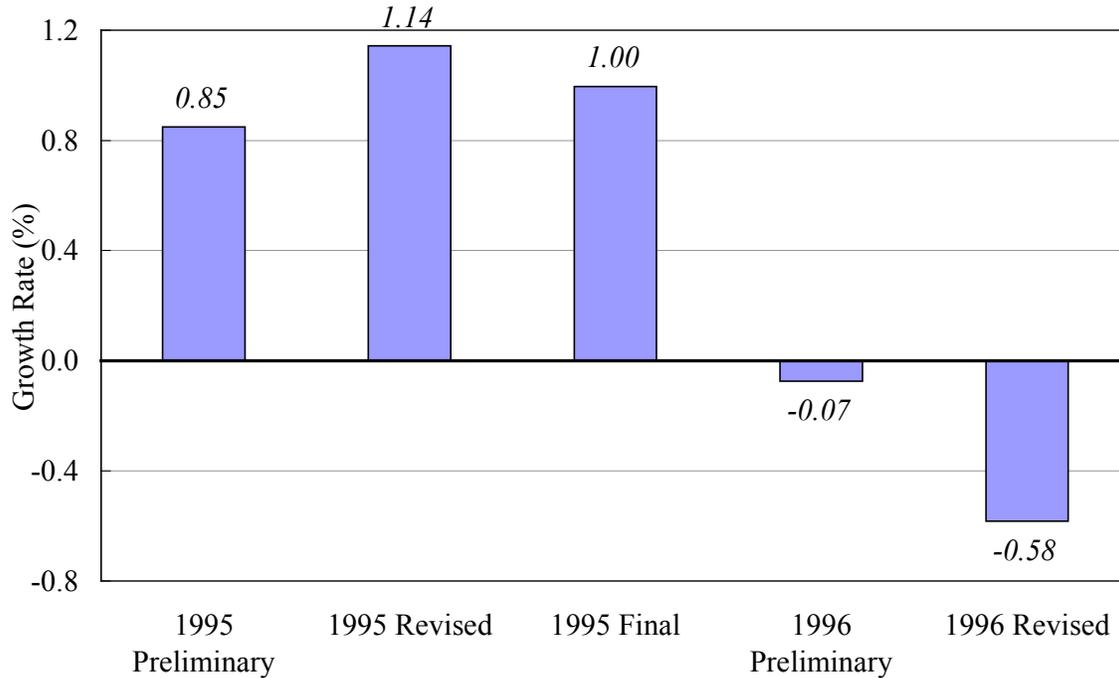
Tallies of the charted data, summarized in Table 2, show that the preliminary estimates correctly indicate the direction of change between 85% and 97% of the time. The consistency of the revised estimates (relative to the final estimates) is greater than the consistency of the preliminary estimates. In other words, there are fewer revisions in the direction of change as one advances through successive estimates.

Table 2. Same Direction of Change Between Various Vintages of the Estimates (Percentage)

	1995		1996
	Preliminary to Revised	**Revised to Final**	**Preliminary to Revised**
Capital	97.5	100.0	100.0
Labour	85.9	95.0	94.1
Value Added	93.3	98.3	94.1
Multifactor Productivity	88.2	98.3	89.9

Two summary measures are used to describe the revisions: bias and dispersion. The measures are calculated as follows. Within each adjacent pairing of estimates expressed as growth rates for each reference year, let F represent the first estimate, S represent the second estimate, and let T be the number of estimates of the annual growth rates.

The bias is the average of the revisions:

$$\sum_{t=1}^{T} \frac{(F - S)}{T}$$

Dispersion is the average of the absolute values of the revisions:

$$\sum_{t=1}^{T} \frac{|F - S|}{T}.$$

Table 3 provides some descriptive statistics on the growth rates for capital, labour, value added and multifactor productivity estimates at the P level of aggregation. These statistics are calculated for the three sets of estimates (preliminary, revised and final) for 1995 and only for two sets for 1996 as the final estimates were not ready at the time this paper was written. For 1995 and 1996, the results indicate that the (weighted) standard deviations of the growth rate estimates of the different variables are small and remain roughly constant from one vintage of the data to another. While the results generally indicate that the preliminary numbers for labour tend to under-estimate the growth rate of the revised data by more than 1/10 of one percentage point, there is however no discernible pattern for the other variables.

Table 4 shows the bias and the dispersion in the capital, labour, value added and multifactor productivity estimates for 1995–1996. These measures show that the bias is generally small, albeit increasing (in absolute value) for labour, value added and, accordingly, multifactor productivity estimates. With 0.15% in absolute value on average for 1995-1996, multifactor productivity estimates show the highest bias. This is primarily attributable to the bias in the value added estimates (0.12% in absolute value for 1995-1996), followed by the bias in the labour estimates (0.065%). These results suggest that the incorporation of additional or more accurate source of data in the preliminary information does not necessarily increase their reliability in comparison with the previous estimates.

Table 3. Descriptive Statistics (Growth Rates in percentage)[a]

	1995 [b]			1996 [c]	
	Preliminary	Revised	Final	Preliminary	Revised
Capital Input					
Mean	6.08	5.99	5.99	4.18	4.18
Standard Deviation	0.21	0.23	0.23	0.15	0.15
CV	0.043	0.048	0.048	0.042	0.042
Labour Input					
Mean	1.85	2.31	1.93	1.76	1.97
Standard Deviation	0.08	0.07	0.07	0.07	0.08
CV	0.048	0.027	0.027	0.052	0.048
Value Added					
Mean	3.69	4.22	3.95	2.55	2.24
Standard Deviation	0.10	0.09	0.08	0.06	0.07
CV	0.035	0.022	0.023	0.024	0.027
Multifactor Productivity					
Mean	0.85	1.14	1.00	-0.07	-0.58
Standard Deviation	0.07	0.06	0.06	0.07	0.07
CV	0.069	0.036	0.043	0.101	0.185

[a] The estimates are weighted. [b] The historical revisions to the labour data are the only major data change between the revised and final estimates for 1995. [c] The estimates for 1996 incorporated new data from all primary sources except for capital.

Table 4. Estimates of the Bias and the Dispersion (Percentage)

	Bias		Dispersion	
	1995	**1996**	**1995**	**1996**
Capital	0.03	0.00	0.17	0.00
Labour	-0.03	-0.10	0.71	0.87
Value Added	-0.09	0.15	0.77	0.69
Multifactor Productivity	-0.05	0.25	0.78	0.85

4. Conclusion

The assessment of the KLEMS database proposed in this paper supplements the analysis of the quality of productivity estimates that appears in Chapter 3 of *Productivity Growth in Canada* (Catalogue 15-204). Quality ratings of all components of the KLEMS database at various levels of aggregation were presented. The results performed on some selected variables such as capital, labour, value added and multifactor productivity, are summarized as follows:

First, the quality ratings that have been assigned indicate that the labour, value added and multifactor productivity data are of acceptable quality for a majority of industries. Though unacceptable quality for the value added estimates exists for only a minority of industries, unacceptable estimates of capital occurred more frequently.

Second, the error measurement results echoed those of the quality ratings just described. The labour data received the lowest estimated error levels while capital received the highest levels. Value added and multifactor productivity estimates had error estimates that were of intermediate relative quality.

Third, the productivity program's preliminary estimates provide the correct direction of change at least 8 times out of 9. When revised data sources are incorporated, we have shown that the bias and the dispersion of the growth rate estimates are small and remain roughly constant across such revisions. In summary, the preliminary estimates of the productivity programme are reliable and any subsequent revision provides a marginal gain in terms of accuracy.

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List of tables

Table A: Ratings of Fisher volume indices at the P level of aggregation (KL)

	Primary inputs		Value added (VA)	Combined inputs (K,L)	Multifactor productivity
	Capital (K)	Labour (L)			
Agricultural and related service industries	2	1	2	1	2
Fishing and trapping industries	3	2	2	3	3
Logging and forestry industries	3	1	1	2	2
Gold mines	3	1	1	2	2
Other metal mines	3	1	1	2	2
Iron mines	2	2	1	2	2
Asbestos mines	2	1	1	1	1
Other non-metal mines (except coal)	3	1	1	2	2
Salt mines	3	1	1	2	2
Coal mines	3	1	2	2	2
Crude petroleum and natural gas industries	3	1	1	3	3
Quarry and sand pit industries	3	1	2	2	2
Serv. ind. incidental to mineral extraction	3	2	3	2	3
Poultry, meat and meat prod. ind.	1	1	2	1	2
Fish products industry	2	1	1	1	1
Fruit and vegetable industries	2	1	1	2	2
Dairy products industries	2	1	2	1	2
Feed industry, Cane and beet sugar industry, Miscellaneous food product industries	1	1	1	1	1
Vegetable oil mills (except corn oil)	2	2	3	2	3
Biscuit industry, Bread and other bakery products industry	3	1	1	2	2
Soft drink industry	1	1	1	1	1
Distillery products industry	1	1	1	1	1
Brewery products industry	1	1	1	1	1
Wine industry	1	1	1	1	1
Tobacco products industries	2	1	1	2	2
Rubber products industries	2	1	1	1	1
Plastic products industries	1	1	1	1	1
Leather tanneries, Footwear industry, Misc. leather and allied products ind.	2	1	1	1	1
Man-made fibre yarn and woven cloth ind.,Wool yarn and woven cloth industry	2	1	1	1	1
Broad knitted fabric industry	3	1	1	2	2
Miscellaneous textile products industries	2	1	1	1	1
Carpet, mat and rug industry	2	1	1	1	1
Clothing, hosiery industries	2	1	1	1	1
Sawmill, planing mill and shingle mill prod. ind.	2	1	1	1	1
Veneer and plywood industries	3	1	1	1	1
Sash, door and other millwork industries	2	1	1	1	1
Wooden box and coffin industries	3	1	1	1	1
Other wood industries	3	1	1	2	2
Household furniture industries	2	1	1	1	1
Office furniture industries	2	1	1	1	1
Other furniture and fixture industries	2	1	2	1	2
Pulp and paper industries	2	1	1	1	1

Table A: Ratings of Fisher volume indices at the P level of aggregation (KL)

	Primary inputs		Value added (VA)	Combined inputs (K,L)	Multifactor productivity
	Capital (K)	Labour (L)			
Asphalt roofing industry	3	1	1	2	2
Paper box and bag industries	2	1	1	1	1
Other converted paper products industries	3	1	1	2	2
Printing and publishing industries	1	1	1	1	1
Platemaking, typesetting and bindery ind.	3	1	1	1	1
Primary steel industries	2	1	1	1	1
Steel pipe and tube industry	3	1	1	2	2
Iron foundries	2	1	2	1	2
Non-ferrous metal smelting and refining ind.	1	1	1	1	1
Aluminum rolling, casting and extruding ind.	1	1	2	1	2
Copper and alloy roll., cast. and extr. ind.	3	1	3	1	3
Oth. roll., cast & extr. non-ferr. met. prod. ind.	3	1	1	2	2
Power boiler and structural metal industries	2	1	1	1	1
Ornamental and architectural metal prod. ind.	2	1	2	1	2
Stamped, pressed and coated metal prod. ind.	3	1	1	2	2
Wire and wire products industries	2	1	1	1	1
Hardware, tool and cutlery industries	2	1	1	1	1
Heating equipment industry	1	1	1	1	1
Machine shop industry	2	1	1	1	1
Other metal fabricating industries	2	1	1	1	1
Agricultural implement industry	2	1	1	1	1
Commercial refrig. and air cond. equip. ind.	2	1	1	1	1
Other machinery and equipment industries	1	1	1	1	1
Aircraft and aircraft parts industry	2	1	1	1	1
Motor vehicle industry	2	1	1	1	1
Truck and bus body and trailer industries	1	1	1	1	1
Motor vehicle parts and accessories ind.	2	1	1	1	1
Railroad rolling stock industry	2	1	1	1	1
Shipbuilding and repair industry	2	1	1	1	1
Misc. transportation equipment ind.	2	1	1	1	1
Small electrical appliance industry	2	2	2	2	2
Major appl. ind. (electric and non-electric)	2	1	2	1	2
Other electrical and electronic product ind.,Battery industry	1	1	1	1	1
Record player, radio and television receiver ind.	1	2	2	2	2
Communic. & other electronic equip. ind.	1	1	1	1	1
Office, store and business machine ind.	2	2	2	2	2
Communic. and energy wire and cable ind.	3	1	1	2	2
Clay products industries	3	1	1	2	2
Hydraulic cement industry	3	2	1	3	3
Concrete products industries	2	1	2	1	2
Ready-mix concrete industry	3	1	2	2	2
Glass and glass products industries	2	1	1	1	1
Misc. non-metallic mineral prod. ind.	2	1	1	1	1
Refined petroleum and coal products ind.	2	2	2	2	2
Industrial chemicals industries n.e.c.	2	1	1	2	2
Chemical products industries n.e.c.	2	1	1	2	2

Table A: Ratings of Fisher volume indices at the P level of aggregation (KL)

	Primary inputs		Value added (VA)	Combined inputs (K,L)	Multifactor productivity
	Capital (K)	Labour (L)			
Plastic and synthetic resin industry	2	1	1	2	2
Pharmaceutical and medicine industry	1	1	1	1	1
Paint and varnish industry	2	2	1	2	2
Soap and cleaning compounds industry	1	1	2	1	2
Toilet preparations industry	1	2	1	2	2
Floor tile, linoleum and coated fabric ind., Other manufacturing industries	2	1	1	1	1
Jewellery and precious metal industries	2	1	3	1	3
Sporting goods and toy industries	1	1	1	1	1
Sign and display industry	2	1	1	1	1
Construction industries	1	1	2	1	2
Air transport and related service industries	2	1	1	1	1
Railway transport and related service ind.	1	1	1	1	1
Water transport and related services ind.	1	1	1	1	1
Truck transport industries	1	1	1	1	1
Urban transit systems industry, interurban and Rural transit systems ind., Misc. transport services	2	1	1	1	1
Pipeline transport industries	2	2	1	2	2
Storage and warehousing industries	2	1	2	1	2
Telecommunication broadcasting ind.	1	1	1	1	1
Telecommunication carriers industries	1	1	1	1	1
Postal and courier service industries	1	1	1	1	1
Electric power systems industry	1	1	1	1	1
Gas distribution systems industry	1	1	1	1	1
Water systems and other utility ind. n.e.c.	1	1	1	1	1
Wholesale trade industries	1	1	1	1	1
Retail trade industries	1	1	1	1	1
Finance and real estate industries	3	1	3	2	3
Insurance industries	3	1	2	2	2
Professional business services industries, Advertising services, Other business services industries	3	1	3	1	3
Educational service industries, private	2	1	3	1	3
Other health and social service industries	1	1	3	1	3
Accommodation and food services ind.	2	1	3	1	3
Motion picture and video industries, Other amusement and recreational services	2	1	2	1	2
Laundries and cleaners, Other personal service industries	2	1	3	1	3
Membership org. (excl relig.) & oth. serv. ind	2	1	1	1	1

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The P level of aggregation contains 122 industries.

Table B: Ratings of Fisher volume indices at the P level of aggregation (KLEMS)								
	Primary inputs		Intermediate inputs					
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)	Gross output (V)	Combined inputs (KLEMS)	Multifactor productivity
Agricultural and related service industries	2	1	2	2	1	2	2	2
Fishing and trapping industries	3	2	3	3	2	1	3	3
Logging and forestry industries	3	1	2	2	2	1	2	2
Gold mines	3	1	1	1	2	1	2	2
Other metal mines	3	1	1	2	2	1	2	2
Iron mines	2	2	1	1	1	2	1	2
Asbestos mines	2	1	1	2	2	1	2	2
Other non-metal mines (except coal)	3	1	2	1	2	1	2	2
Salt mines	3	1	2	1	1	1	2	2
Coal mines	3	1	1	2	1	1	2	2
Crude petroleum and natural gas industries	3	1	1	2	1	1	3	3
Quarry and sand pit industries	3	1	1	2	1	1	2	2
Serv. ind. incidental to mineral extraction	3	2	2	2	2	3	2	3
Poultry, meat and meat prod. ind.	1	1	2	1	2	1	1	1
Fish products industry	2	1	2	1	1	1	1	1
Fruit and vegetable industries	2	1	1	1	1	1	1	1
Dairy products industries	2	1	1	1	1	1	1	1
Feed industry, Cane and beet sugar industry, Miscellaneous food product industries	1	1	1	1	1	1	1	1
Vegetable oil mills (except corn oil)	2	2	1	1	1	1	1	1
Biscuit industry, Bread and other bakery products industry	3	1	1	1	1	1	1	1
Soft drink industry	1	1	1	1	1	1	1	1
Distillery products industry	1	1	1	1	1	1	1	1
Brewery products industry	1	1	1	1	1	1	1	1
Wine industry	1	1	1	1	1	1	1	1
Tobacco products industries	2	1	1	1	1	1	1	1
Rubber products industries	2	1	1	1	1	1	1	1
Plastic products industries	1	1	1	1	1	1	1	1
Leather tanneries, Footwear industry, Misc. leather and allied products ind.	2	1	1	1	1	1	1	1
Man-made fibre yarn and woven cloth ind.,Wool yarn and woven cloth industry	2	1	1	1	1	1	1	1
Broad knitted fabric industry	3	1	1	1	1	1	1	1
Miscellaneous textile products industries	2	1	1	1	1	1	1	1
Carpet, mat and rug industry	2	1	1	1	1	1	1	1
Clothing, hosiery industries	2	1	1	1	1	1	1	1
Sawmill, planing mill and shingle mill prod. ind.	2	1	1	1	1	1	1	1
Veneer and plywood industries	3	1	1	1	1	1	1	1
Sash, door and other millwork industries	2	1	2	1	1	1	1	1
Wooden box and coffin industries	3	1	1	1	1	1	1	1
Other wood industries	3	1	1	1	1	1	1	1
Household furniture industries	2	1	1	1	1	1	1	1
Office furniture industries	2	1	1	1	1	1	1	1
Other furniture and fixture industries	2	1	1	1	2	1	1	1

	Primary inputs		Intermediate inputs					
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)	Gross output (V)	Combined inputs (KLEMS)	Multifactor productivity
Pulp and paper industries	2	1	1	1	1	1	1	1
Asphalt roofing industry	3	1	1	1	1	1	2	2
Paper box and bag industries	2	1	1	1	1	1	1	1
Other converted paper products industries	3	1	1	1	1	1	1	1
Printing and publishing industries	1	1	1	1	1	1	1	1
Platemaking, typesetting and bindery ind.	3	1	1	1	2	1	1	1
Primary steel industries	2	1	1	1	1	1	1	1
Steel pipe and tube industry	3	1	2	1	1	1	1	1
Iron foundries	2	1	2	1	1	2	1	2
Non-ferrous metal smelting and refining ind.	1	1	1	1	1	1	1	1
Aluminum rolling, casting and extruding ind.	1	1	2	1	2	1	1	1
Copper and alloy roll., cast. and extr. ind.	3	1	2	3	2	3	3	3
Oth. roll., cast & extr. non-ferr. met. prod. ind.	3	1	2	1	2	1	1	1
Power boiler and structural metal industries	2	1	1	1	1	1	1	1
Ornamental and architectural metal prod. ind.	2	1	2	1	1	1	1	1
Stamped, pressed and coated metal prod. ind.	3	1	2	1	1	1	1	1
Wire and wire products industries	2	1	2	1	1	1	1	1
Hardware, tool and cutlery industries	2	1	1	1	1	1	1	1
Heating equipment industry	1	1	1	1	1	1	1	1
Machine shop industry	2	1	1	1	1	1	1	1
Other metal fabricating industries	2	1	1	1	1	1	1	1
Agricultural implement industry	2	1	1	1	1	1	1	1
Commercial refrig. and air cond. equip. ind.	2	1	1	1	1	1	1	1
Other machinery and equipment industries	1	1	1	1	1	1	1	1
Aircraft and aircraft parts industry	2	1	2	1	1	1	1	1
Motor vehicle industry	2	1	2	1	1	1	1	1
Truck and bus body and trailer industries	1	1	1	1	1	1	1	1
Motor vehicle parts and accessories ind.	2	1	1	1	1	1	1	1
Railroad rolling stock industry	2	1	1	1	1	1	1	1
Shipbuilding and repair industry	2	1	1	2	1	1	1	1
Misc. transportation equipment ind.	2	1	2	1	1	1	1	1
Small electrical appliance industry	2	2	2	2	2	2	2	2
Major appl. ind. (electric and non-electric)	2	1	1	1	2	1	1	1
Other electrical and electronic product ind., Battery industry	1	1	2	1	1	1	1	1
Record player, radio and television receiver ind.	1	2	3	2	2	3	2	3
Communic. & other electronic equip. ind.	1	1	1	2	1	1	1	1
Office, store and business machine ind.	2	2	3	2	1	2	2	2
Communic. and energy wire and cable ind.	3	1	2	1	1	1	1	1
Clay products industries	3	1	1	1	1	1	1	1
Hydraulic cement industry	3	2	1	2	1	1	2	2
Concrete products industries	2	1	2	1	1	1	1	1
Ready-mix concrete industry	3	1	1	1	1	2	1	2
Glass and glass products industries	2	1	2	1	1	1	1	1
Misc. non-metallic mineral prod. ind.	2	1	2	1	1	1	1	1
Refined petroleum and coal products ind.	2	2	3	1	1	1	1	1

Table B: Ratings of Fisher volume indices at the P level of aggregation (KLEMS)

Table B: Ratings of Fisher volume indices at the P level of aggregation (KLEMS)	Primary inputs		Intermediate inputs					
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)	Gross output (V)	Combined inputs (KLEMS)	Multifactor productivity
Industrial chemicals industries n.e.c.	2	1	1	1	1	1	1	1
Chemical products industries n.e.c.	2	1	3	1	1	2	1	2
Plastic and synthetic resin industry	2	1	2	1	1	1	1	1
Pharmaceutical and medicine industry	1	1	1	1	1	1	1	1
Paint and varnish industry	2	2	3	1	1	1	1	1
Soap and cleaning compounds industry	1	1	1	1	1	1	1	1
Toilet preparations industry	1	2	2	1	1	1	1	1
Floor tile, linoleum and coated fabric ind., Other manufacturing industries	2	1	2	1	1	1	1	1
Jewellery and precious metal industries	2	1	3	2	2	2	2	2
Sporting goods and toy industries	1	1	2	1	1	1	1	1
Sign and display industry	2	1	1	1	1	1	1	1
Construction industries	1	1	3	2	1	1	1	1
Air transport and related service industries	2	1	1	3	1	1	1	1
Railway transport and related service ind.	1	1	2	3	2	1	1	1
Water transport and related services ind.	1	1	2	3	2	1	2	2
Truck transport industries	1	1	1	1	1	1	1	1
Urban transit systems industry, Interurban and rural transit systems ind., Misc. transport services	2	1	1	3	1	1	1	1
Pipeline transport industries	2	2	3	3	2	1	2	2
Storage and warehousing industries	2	1	2	3	2	1	2	2
Telecommunication broadcasting ind.	1	1	2	2	1	1	1	1
Telecommunication carriers industries	1	1	3	3	1	1	1	1
Postal and courier service industries	1	1	3	2	2	1	1	1
Electric power systems industry	1	1	3	2	2	1	1	1
Gas distribution systems industry	1	1	2	3	1	1	1	1
Water systems and other utility ind. n.e.c.	1	1	3	3	1	1	2	2
Wholesale trade industries	1	1	1	1	1	1	1	1
Retail trade industries	1	1	2	2	1	1	1	1
Finance and real estate industries	3	1	1	3	1	3	2	3
Insurance industries	3	1	3	2	1	1	1	1
Professional business services industries, Advertising services, Other business services industries	3	1	1	1	1	3	1	3
Educational service industries, private	2	1	2	2	1	3	1	3
Other health and social service industries	1	1	1	3	1	3	1	3
Accommodation and food services ind.	2	1	2	1	1	3	1	3
Motion picture and video industries, Other amusement and recreational services	2	1	1	1	1	1	1	1
Laundries and cleaners, Other personal service industries	2	1	1	2	1	3	1	3
Membership org. (excl relig.) & oth. serv. ind	2	1	3	1	2	1	2	2

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The P level of aggregation contains 122 industries.

Table C: Ratings of the inputs cost in current dollars at the P level of aggregation (KLEMS)

	Compensation of primary inputs		Cost of intermediate inputs			
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)	Total cost of inputs
Agricultural and related service industries	1	1	1	2	1	1
Fishing and trapping industries	1	1	2	2	1	1
Logging and forestry industries	1	1	2	2	2	2
Gold mines	1	1	1	1	1	1
Other metal mines	1	1	2	1	2	1
Iron mines	2	1	2	2	1	2
Asbestos mines	3	1	2	2	1	2
Other non-metal mines (except coal)	1	1	2	1	1	1
Salt mines	3	2	1	1	1	2
Coal mines	3	1	1	1	1	2
Crude petroleum and natural gas industries	1	1	1	1	1	1
Quarry and sand pit industries	1	1	1	1	1	1
Serv. ind. incidental to mineral extraction	2	1	1	1	1	1
Poultry, meat and meat prod. ind.	2	1	2	1	1	1
Fish products industry	2	1	1	1	1	1
Fruit and vegetable industries	1	1	1	1	1	1
Dairy products industries	2	1	1	1	1	1
Feed industry, Cane and beet sugar industry, Miscellaneous food product industries	2	1	1	1	1	1
Vegetable oil mills (except corn oil)	3	1	1	1	1	1
Biscuit industry, Bread and other bakery products industry	1	1	1	1	1	1
Soft drink industry	1	1	1	1	2	1
Distillery products industry	1	1	2	1	1	1
Brewery products industry	2	1	1	1	1	1
Wine industry	1	1	1	1	1	1
Tobacco products industries	2	1	1	1	2	1
Rubber products industries	3	1	1	1	1	1
Plastic products industries	1	1	1	1	1	1
Leather tanneries, Footwear industry, Misc. leather and allied products ind.	3	1	1	1	1	1
Man-made fibre yarn and woven cloth ind.,Wool yarn and woven cloth industry	1	1	2	1	1	1
Broad knitted fabric industry	2	1	2	1	1	1
Miscellaneous textile products industries	1	1	1	1	1	1
Carpet, mat and rug industry	3	1	1	1	2	1
Clothing, hosiery industries	1	1	1	1	1	1
Sawmill, planing mill and shingle mill prod. ind.	3	1	1	1	1	1
Veneer and plywood industries	3	1	2	1	1	1
Sash, door and other millwork industries	2	1	1	1	1	1
Wooden box and coffin industries	3	1	2	1	2	1
Other wood industries	3	1	2	1	1	1
Household furniture industries	1	1	1	1	1	1
Office furniture industries	2	1	1	1	1	1
Other furniture and fixture industries	2	1	1	1	1	1

Table C: Ratings of the inputs cost in current dollars at the P level of aggregation (KLEMS)

	Compensation of primary inputs		Cost of intermediate inputs			
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)	Total cost of inputs
Pulp and paper industries	2	1	1	2	2	2
Asphalt roofing industry	2	1	2	1	1	1
Paper box and bag industries	1	1	1	1	1	1
Other converted paper products industries	2	1	1	1	1	1
Printing and publishing industries	1	1	1	1	1	1
Platemaking, typesetting and bindery ind.	2	1	1	1	1	1
Primary steel industries	3	1	1	1	1	1
Steel pipe and tube industry	1	1	2	1	1	1
Iron foundries	2	2	2	2	2	2
Non-ferrous metal smelting and refining ind.	1	1	1	1	1	1
Aluminum rolling, casting and extruding ind.	3	1	2	2	2	2
Copper and alloy roll., cast. and extr. ind.	3	2	2	1	1	1
Oth. roll., cast & extr. non-ferr. met. prod. ind.	1	1	2	1	1	1
Power boiler and structural metal industries	1	1	1	1	1	1
Ornamental and architectural metal prod. ind.	1	1	1	1	1	1
Stamped, pressed and coated metal prod. ind.	2	1	1	2	1	2
Wire and wire products industries	1	1	1	1	1	1
Hardware, tool and cutlery industries	1	1	1	1	1	1
Heating equipment industry	2	1	2	1	1	1
Machine shop industry	1	1	1	1	1	1
Other metal fabricating industries	1	1	1	1	1	1
Agricultural implement industry	2	1	1	1	2	1
Commercial refrig. and air cond. equip. ind.	1	1	1	1	1	1
Other machinery and equipment industries	1	1	1	1	1	1
Aircraft and aircraft parts industry	3	1	1	1	1	1
Motor vehicle industry	3	1	1	1	2	1
Truck and bus body and trailer industries	3	1	1	1	1	1
Motor vehicle parts and accessories ind.	1	1	1	1	1	1
Railroad rolling stock industry	3	2	1	2	2	2
Shipbuilding and repair industry	3	1	1	2	2	2
Misc. transportation equipment ind.	1	1	1	1	1	1
Small electrical appliance industry	3	1	1	1	2	1
Major appl. ind. (electric and non-electric)	3	1	1	1	1	1
Other electrical and electronic product ind.,Battery industry	1	1	3	1	1	1
Record player, radio and television receiver ind.	3	1	2	2	2	2
Communic. & other electronic equip. ind.	1	1	1	1	1	1
Office, store and business machine ind.	3	1	1	2	1	2
Communic. and energy wire and cable ind.	1	1	2	1	1	1
Clay products industries	2	1	1	1	1	1
Hydraulic cement industry	1	1	1	1	1	1
Concrete products industries	1	1	1	1	1	1
Ready-mix concrete industry	2	1	1	1	2	1
Glass and glass products industries	2	1	2	1	1	1
Misc. non-metallic mineral prod. ind.	1	1	1	1	1	1
Refined petroleum and coal products ind.	3	1	2	2	1	2

Table C: Ratings of the inputs cost in current dollars at the P level of aggregation (KLEMS)						
	Compensation of primary inputs		Cost of intermediate inputs			
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)	Total cost of inputs
Industrial chemicals industries n.e.c.	2	1	2	1	1	1
Chemical products industries n.e.c.	2	1	3	1	1	1
Plastic and synthetic resin industry	3	1	2	1	1	1
Pharmaceutical and medicine industry	1	1	1	1	1	1
Paint and varnish industry	1	1	2	1	1	1
Soap and cleaning compounds industry	2	1	1	1	1	1
Toilet preparations industry	1	1	1	1	1	1
Floor tile, linoleum and coated fabric ind., Other manufacturing industries	1	1	1	1	1	1
Jewellery and precious metal industries	3	1	1	2	2	2
Sporting goods and toy industries	1	1	1	1	1	1
Sign and display industry	1	1	1	1	1	1
Construction industries	1	1	2	1	1	1
Air transport and related service industries	1	1	1	1	1	1
Railway transport and related service ind.	1	1	2	1	1	1
Water transport and related services ind.	1	1	2	1	1	1
Truck transport industries	1	1	1	1	1	1
Urban transit systems industry, Interurban and rural transit systems ind.,'Miscellaneous transport services	1	1	1	1	2	1
Pipeline transport industries	1	2	2	2	1	1
Storage and warehousing industries	2	1	3	1	1	1
Telecommunication broadcasting ind.	1	1	1	1	1	1
Telecommunication carriers industries	1	1	2	2	2	1
Postal and courier service industries	3	1	3	1	1	1
Electric power systems industry	1	1	3	2	1	1
Gas distribution systems industry	1	1	2	2	1	1
Water systems and other utility ind. n.e.c.	1	1	3	3	1	2
Wholesale trade industries	1	1	1	1	1	1
Retail trade industries	1	1	2	1	1	1
Finance and real estate industries	1	1	1	2	1	1
Insurance industries	1	1	1	2	1	1
Professional business services industries, Advertising services, Other business services industries	1	1	1	2	1	1
Educational service industries, private	3	1	1	1	1	1
Other health and social service industries	1	1	1	2	1	1
Accommodation and food services ind.	1	1	1	1	1	1
Motion picture and video industries, Other amusement and recreational services	1	1	1	1	1	1
Laundries and cleaners, Other personal service industries	2	1	2	1	1	1
Membership org. (excl relig.) & oth. serv. ind	1	1	2	1	2	1

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The P level of aggregation contains 122 industries.

Table D: Ratings of Fisher volume indices at the M level of aggregation (KL)

	Primary inputs		Value added (VA)	Combined inputs (K,L)	Multifactor productivity
	Capital (K)	Labour (L)			
Agricultural and related service industries	2	1	2	1	2
Fishing and trapping industries	3	2	2	3	3
Logging and forestry industries	3	1	1	2	2
Mining industries	3	1	1	2	2
Crude petroleum and natural gas industries	3	1	1	3	3
Quarry and sand pit industries	3	1	2	2	2
Services ind. incidental to mineral extraction	3	2	3	2	3
Food industries	2	1	1	1	1
Beverage industries	1	1	1	1	1
Tobacco products industry	2	1	1	2	2
Rubber products industries	2	1	1	1	1
Plastic products industries	1	1	1	1	1
Leather and allied products industries	2	1	1	1	1
Primary textile industries	2	1	1	1	1
Textile products industries	2	1	1	1	1
Clothing industries	2	1	1	1	1
Wood industries	2	1	1	1	1
Furniture and fixture industries	2	1	1	1	1
Paper and allied products industries	2	1	1	1	1
Printing, publishing and allied industries	1	1	1	1	1
Primary metal industries	2	1	1	1	1
Fabricated metal products industries	2	1	1	1	1
Machinery ind. (except electrical mach)	1	1	1	1	1
Transportation equipment industries	2	1	1	1	1
Electrical and electronic products industries	1	1	1	1	1
Non-metallic mineral products industries	2	1	1	1	1
Refined petroleum and coal products ind.	2	2	2	2	2
Chemical and chemical products industries	2	1	1	2	2
Other manufacturing industries	2	1	1	1	1
Construction industries	1	1	2	1	2
Transportation industries	1	1	1	1	1
Pipeline transport industries	2	2	1	2	2
Storage and warehousing Industries	2	1	2	1	2
Communication industries	1	1	1	1	1
Other utility industries	1	1	1	1	1
Wholesale trade industries	1	1	1	1	1
Retail trade industries	1	1	1	1	1
Finance & real estate industries	3	1	3	2	3
Insurance industries	3	1	2	2	2
Business service industries	3	1	3	1	3
Educational service industries	2	1	3	1	3
Health and social service industries	1	1	3	1	3
Accommodation and food services ind.	2	1	3	1	3
Amusement and recreational service ind.	2	1	2	1	2
Personal & household service industries	2	1	3	1	3
Other service industries	2	1	1	1	1

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The M level of aggregation contains 46 industries.

Table E: Ratings of Fisher volume indices at the M level of aggregation (KLEMS)	Primary inputs		Intermediate inputs			Gross output (V)	Combined inputs (KLEMS)	Multifactor productivity
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)			
Agricultural and related service industries	2	1	2	2	1	2	2	2
Fishing and trapping industries	3	2	3	3	2	1	3	3
Logging and forestry industries	3	1	2	2	2	1	2	2
Mining industries	3	1	1	2	2	1	2	2
Crude petroleum and natural gas industries	3	1	1	2	1	1	3	3
Quarry and sand pit industries	3	1	1	2	1	1	2	2
Services ind. incidental to mineral extraction	3	2	2	2	2	3	2	3
Food industries	2	1	1	1	1	1	1	1
Beverage industries	1	1	1	1	1	1	1	1
Tobacco products industry	2	1	1	1	1	1	1	1
Rubber products industries	2	1	1	1	1	1	1	1
Plastic products industries	1	1	1	1	1	1	1	1
Leather and allied products industries	2	1	1	1	1	1	1	1
Primary textile industries	2	1	1	1	1	1	1	1
Textile products industries	2	1	1	1	1	1	1	1
Clothing industries	2	1	1	1	1	1	1	1
Wood industries	2	1	1	1	1	1	1	1
Furniture and fixture industries	2	1	1	1	1	1	1	1
Paper and allied products industries	2	1	1	1	1	1	1	1
Printing, publishing and allied industries	1	1	1	1	1	1	1	1
Primary metal industries	2	1	1	1	1	1	1	1
Fabricated metal products industries	2	1	1	1	1	1	1	1
Machinery ind. (except electrical mach)	1	1	1	1	1	1	1	1
Transportation equipment industries	2	1	1	1	1	1	1	1
Electrical and electronic products industries	1	1	2	2	1	1	1	1
Non-metallic mineral products industries	2	1	2	1	1	1	1	1
Refined petroleum and coal products ind.	2	2	3	1	1	1	1	1
Chemical and chemical products industries	2	1	2	1	1	1	1	1
Other manufacturing industries	2	1	2	1	1	1	1	1
Construction industries	1	1	3	2	1	1	1	1
Transportation industries	1	1	1	2	1	1	1	1
Pipeline transport industries	2	2	3	3	2	1	2	2
Storage and warehousing Industries	2	1	2	3	2	1	2	2
Communication industries	1	1	3	3	1	1	1	1
Other utility industries	1	1	3	2	2	1	1	1
Wholesale trade industries	1	1	1	1	1	1	1	1
Retail trade industries	1	1	2	2	1	1	1	1
Finance & real estate industries	3	1	1	3	1	3	2	3
Insurance industries	3	1	3	2	1	1	1	1
Business service industries	3	1	1	1	1	3	1	3
Educational service industries	2	1	2	2	1	3	1	3
Health and social service industries	1	1	1	3	1	3	1	3
Accommodation and food services ind.	2	1	2	1	1	3	1	3
Amusement and recreational service ind.	2	1	1	1	1	1	1	1
Personal & household service industries	2	1	1	2	1	3	1	3
Other service industries	2	1	3	1	2	1	2	2

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The M level of aggregation contains 46 industries.

Table F: Ratings of the inputs cost in current dollars at the M level of aggregation (KLEMS)

	Compensation of primary inputs		Cost of intermediate inputs			Total cost of inputs
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)	
Agricultural and related service industries	1	1	1	2	1	1
Fishing and trapping industries	1	1	2	2	1	1
Logging and forestry industries	1	1	2	2	2	2
Mining industries	1	1	2	1	2	1
Crude petroleum and natural gas industries	1	1	1	1	1	1
Quarry and sand pit industries	1	1	1	1	1	1
Services ind. incidental to mineral extraction	2	1	1	1	1	1
Food industries	2	1	1	1	1	1
Beverage industries	2	1	1	1	1	1
Tobacco products industry	2	1	1	1	2	1
Rubber products industries	3	1	1	1	1	1
Plastic products industries	1	1	1	1	1	1
Leather and allied products industries	3	1	1	1	1	1
Primary textile industries	1	1	2	1	1	1
Textile products industries	1	1	1	1	1	1
Clothing industries	1	1	1	1	1	1
Wood industries	3	1	1	1	1	1
Furniture and fixture industries	2	1	1	1	1	1
Paper and allied products industries	2	1	1	2	2	2
Printing, publishing and allied industries	1	1	1	1	1	1
Primary metal industries	2	1	1	1	1	1
Fabricated metal products industries	1	1	1	1	1	1
Machinery ind. (except electrical mach.)	1	1	1	1	1	1
Transportation equipment industries	2	1	1	1	1	1
Electrical and electronic products industries	1	1	2	1	1	1
Non-metallic mineral products industries	1	1	1	1	1	1
Refined petroleum and coal products ind.	3	1	2	2	1	2
Chemical and chemical products industries	2	1	2	1	1	1
Other manufacturing industries	1	1	1	1	1	1
Construction industries	1	1	2	1	1	1
Transportation industries	1	1	1	1	1	1
Pipeline transport industries	1	2	2	2	1	1
Storage and warehousing Industries	2	1	3	1	1	1
Communication industries	1	1	2	2	2	1
Other utility industries	1	1	3	2	1	1
Wholesale trade industries	1	1	1	1	1	1
Retail trade industries	1	1	2	1	1	1
Finance & real estate industries	1	1	1	2	1	1
Insurance industries	1	1	1	2	1	1
Business service industries	1	1	1	2	1	1
Educational service industries	3	1	1	1	1	1
Health and social service industries	1	1	1	2	1	1
Accommodation and food services ind.	1	1	1	1	1	1
Amusement and recreational service ind.	1	1	1	1	1	1
Personal & household service industries	2	1	2	1	1	1
Other service industries	1	1	2	1	2	1

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The M level of aggregation contains 46 industries.

Table G: Ratings of Fisher volume indices at the S level of aggregation (KL)					
	Primary Inputs				
	Capital (K)	Labour (L)	Value added (VA)	Combined inputs (K,L)	Multifactor productivity
Agricultural and related services ind.	2	1	2	1	2
Fishing and trapping industries	3	2	2	3	3
Logging and forestry industries	3	1	1	2	2
Mining, quarrying and oil well industries	3	1	1	3	3
Manufacturing industries	2	1	1	1	1
Construction industries	1	1	2	1	2
Transportation and storage industries	1	1	1	1	1
Communication and other utility ind.	1	1	1	1	1
Wholesale trade industries	1	1	1	1	1
Retail trade industries	1	1	1	1	1
Finance, insurance and real estate industries	3	1	3	2	3
Business service industries	3	1	3	1	3
Educational service industries	2	1	3	1	3
Health and social service ind.	1	1	3	1	3
Accommodation and food services ind.	2	1	3	1	3
Other service industries	2	1	2	1	2

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The S level of aggregation contains 16 industries.

Table H: Ratings of Fisher volume indices at the S level of aggregation (KLEMS)								
	Primary inputs		Intermediate inputs					
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)	Gross output (V)	Combined inputs (KLEMS)	Multifactor productivity
Agricultural and related services ind.	2	1	2	2	1	2	2	2
Fishing and trapping industries	3	2	3	3	2	1	3	3
Logging and forestry industries	3	1	2	2	2	1	2	2
Mining, quarrying and oil well industries	3	1	1	2	1	1	2	2
Manufacturing industries	2	1	1	1	1	1	1	1
Construction industries	1	1	3	2	1	1	1	1
Transportation and storage industries	1	1	2	2	1	1	1	1
Communication and other utility ind.	1	1	3	2	2	1	1	1
Wholesale trade industries	1	1	1	1	1	1	1	1
Retail trade industries	1	1	2	2	1	1	1	1
Finance, insurance and real estate industries	3	1	1	3	1	3	2	3
Business service industries	3	1	1	1	1	3	1	3
Educational service industries	2	1	2	2	1	3	1	3
Health and social service ind.	1	1	1	3	1	3	1	3
Accommodation and food services ind.	2	1	2	1	1	3	1	3
Other service industries	2	1	2	1	1	2	1	2

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The S level of aggregation contains 16 industries.

Table I: Ratings of the inputs cost in current dollars at the S level of aggregation (KLEMS)

	Compensation of primary inputs		Cost of intermediate inputs			Total cost of inputs
	Capital (K)	Labour (L)	Energy (E)	Materials (M)	Services (S)	
Agricultural and related services ind.	1	1	1	2	1	1
Fishing and trapping industries	1	1	2	2	1	1
Logging and forestry industries	1	1	2	2	2	2
Mining, quarrying and oil well industries	1	1	1	1	1	1
Manufacturing industries	2	1	1	1	1	1
Construction industries	1	1	2	1	1	1
Transportation and storage industries	1	1	1	1	1	1
Communication and other utility ind.	1	1	3	2	1	1
Wholesale trade industries	1	1	1	1	1	1
Retail trade industries	1	1	2	1	1	1
Finance, insurance and real estate industries	1	1	1	2	1	1
Business service industries	1	1	1	2	1	1
Educational service industries	3	1	1	1	1	1
Health and social service ind.	1	1	1	2	1	1
Accommodation and food services ind.	1	1	1	1	1	1
Other service industries	1	1	2	1	1	1

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The S level of aggregation contains 16 industries.

Table J: Ratings of labour productivity and unit labour cost at the L level of aggregation	Value added	Hours	Jobs	Labour compensation	Labour productivity	Unit labour cost
Agricultural and related service industries	2	1	1	1	2	2
Fishing and trapping industries	2	2	2	1	2	2
Logging and forestry industries	1	1	1	1	1	1
Gold mines	1	1	1	1	1	1
Other metal mines	1	1	1	1	1	1
Iron mines	1	2	2	1	2	1
Asbestos mines	1	1	1	1	1	1
Other non-metal mines (except coal)	1	1	1	1	1	1
Salt mines	1	1	1	1	1	1
Coal mines	2	1	1	1	2	2
Crude petroleum and natural gas industries	1	1	1	1	1	1
Quarry and sand pit industries	2	1	1	1	2	2
Services ind. incidental to mineral extraction	3	2	2	1	3	3
Meat and meat products ind. (except poultry)	2	1	1	1	2	2
Poultry products industry	3	1	1	1	3	3
Fish products industry	1	1	1	1	1	1
Fruit and vegetable industries	1	1	1	1	1	1
Dairy products industries	2	1	1	1	2	2
Miscellaneous food product industries	1	1	1	1	1	1
Feed industry	1	1	1	1	1	1
Vegetable oil mills (except corn oil)	3	2	2	1	3	3
Biscuit industry	2	1	1	1	2	**2**
Bread and other bakery products industry	2	1	1	1	2	2
Cane and beet sugar industry	3	1	1	1	3	3
Soft drink industry	1	1	1	2	1	2
Distillery products industry	1	1	1	1	1	1
Brewery products industry	1	1	1	1	1	1
Wine industry	1	1	1	1	1	1
Tobacco products industries	1	1	1	1	1	1
Rubber products industries	1	1	1	1	1	1
Plastic products industries	1	1	1	1	1	1
Leather tanneries	2	1	1	1	2	2
Footwear industry	1	1	1	1	1	1
Miscellaneous leather and allied products ind.	1	1	1	1	1	1
Man-made fibre yarn and woven cloth ind.	1	1	1	1	1	1
Wool yarn and woven cloth industry	2	1	1	1	2	2
Broad knitted fabric industry	1	1	1	1	1	1
Miscellaneous textile products industries	1	1	1	1	1	1
Carpet, mat and rug industry	1	1	1	1	1	1
Clothing industries excluding hosiery	1	1	1	1	1	**1**
Hosiery industry	1	1	1	1	1	1
Sawmill, planing mill and shingle mill prod. ind.	1	1	1	1	1	1
Veneer and plywood industries	1	1	1	1	1	1
Sash, door and other millwork industries	1	1	1	1	1	1
Wooden box and coffin industries	1	1	1	1	1	1
Other wood industries	1	1	1	1	1	1
Household furniture industries	1	1	1	1	1	1
Office furniture industries	1	1	1	1	1	1
Other furniture and fixture industries	2	1	1	1	2	2

Table J: Ratings of labour productivity and unit labour cost at the L level of aggregation

	Value added	Hours	Jobs	Labour compensation	Labour productivity	Unit labour cost
Pulp and paper industries	1	1	1	1	1	1
Asphalt roofing industry	1	1	1	1	1	1
Paper box and bag industries	1	1	1	1	1	1
Other converted paper products industries	1	1	1	1	1	1
Printing and publishing industries	1	1	1	1	1	1
Platemaking, typesetting and bindery industry	1	1	1	1	1	1
Primary steel industries	1	1	1	1	1	1
Steel pipe and tube industry	1	1	1	1	1	1
Iron foundries	2	1	1	1	2	2
Non-ferrous metal smelting and refining ind.	1	1	1	1	1	1
Aluminum rolling, casting and extruding ind.	2	1	1	1	2	2
Copper and copper alloy roll., cast. and extr. ind.	3	1	1	1	3	3
Oth. roll., cast & extr. non-ferrous met. prod. ind.	1	1	1	1	1	1
Power boiler and structural metal industries	1	1	1	1	1	1
Ornamental and architectural metal prod. ind.	2	1	1	1	2	2
Stamped, pressed and coated metal prod. ind.	1	1	1	1	1	1
Wire and wire products industries	1	1	1	1	1	1
Hardware, tool and cutlery industries	1	1	1	1	1	1
Heating equipment industry	1	1	1	1	1	1
Machine shop industry	1	1	1	1	1	1
Other metal fabricating industries	1	1	1	1	1	1
Agricultural implement industry	1	1	1	1	1	1
Commercial refrig. and air cond. equip. ind.	1	1	1	1	1	1
Other machinery and equipment industries	1	1	1	1	1	1
Aircraft and aircraft parts industry	1	1	1	1	1	1
Motor vehicle industry	1	1	1	1	1	1
Truck and bus body and trailer industries	1	1	1	1	1	1
Motor vehicle parts and accessories industries	1	1	1	1	1	1
Railroad rolling stock industry	1	1	1	1	1	1
Shipbuilding and repair industry	1	1	1	1	1	1
Miscellaneous transportation equipment ind.	1	1	1	1	1	1
Small electrical appliance industry	2	2	2	1	2	2
Major appliance ind. (electric and non-electric)	2	1	1	1	2	2
Other electrical and electronic product ind.	1	1	1	1	1	1
Record player, radio and television receiver ind.	2	2	2	1	2	2
Communication & other electronic equip. ind.	1	1	1	1	1	1
Office, store and business machine industries	2	2	2	1	2	2
Communications and energy wire and cable ind.	1	1	1	1	1	1
Battery industry	2	1	1	1	2	2
Clay products industries	1	1	1	1	1	1
Hydraulic cement industry	1	2	2	1	2	1
Concrete products industries	2	1	1	1	2	2
Ready-mix concrete industry	2	1	1	1	2	2
Glass and glass products industries	1	1	1	1	1	1
Miscellaneous non-metallic mineral products ind.	1	1	1	1	1	1
Refined petroleum and coal products industries	2	2	2	1	2	2
Industrial chemicals industries n.e.c.	1	1	1	1	1	1
Chemical products industries n.e.c.	1	1	1	1	1	1
Plastic and synthetic resin industry	1	1	1	1	1	1
Pharmaceutical and medicine industry	1	1	1	1	1	1
Paint and varnish industry	1	2	2	1	2	1

Table J: Ratings of labour productivity and unit labour cost at the L level of aggregation

	Value added	Hours	Jobs	Labour compensation	Labour productivity	Unit labour cost
Soap and cleaning compounds industry	2	1	1	1	2	2
Toilet preparations industry	1	2	2	1	2	1
Other manufacturing industries	1	1	1	1	1	1
Jewellery and precious metal industries	3	1	1	1	3	3
Sporting goods and toy industries	1	1	1	1	1	1
Sign and display industry	1	1	1	1	1	1
Floor tile, linoleum and coated fabric industry	3	1	1	1	3	3
Repair construction	2	2	2	1	2	2
Residential construction	2	2	2	1	2	2
Non-residential building construction	2	1	1	1	2	2
Road, highway and airport runway construction	3	3	3	1	3	3
Gas and oil facility construction	2	2	2	2	2	2
Electric power, dams and irrigation construction	2	1	1	1	2	2
Railway and telecommunication construction	2	1	1	1	2	2
Other engineering construction	2	1	1	1	2	2
Construction, other activities	2	1	1	1	2	2
Air transport and related service industries	1	1	1	1	1	1
Railway transport and related service industries	1	1	1	1	1	1
Water transport and related services industries	1	1	1	1	1	1
Truck transport industries	1	1	1	1	1	1
Urban transit systems industry	2	1	1	1	2	2
Interurban and rural transit systems industry	2	1	1	1	2	2
Miscellaneous transport services	1	1	1	1	1	1
Pipeline transport industries	1	2	2	2	2	2
Storage and warehousing industries	2	1	1	1	2	2
Telecommunication broadcasting industries	1	1	1	1	1	1
Telecommunication carriers industries	1	1	1	1	1	1
Postal and courier service industries	1	1	1	1	1	1
Electric power systems industry	1	1	1	1	1	1
Gas distribution systems industry	1	1	1	1	1	1
Water systems and other utility industries n.e.c.	1	1	1	1	1	1
Wholesale trade industries	1	1	1	1	1	1
Retail trade industries	1	1	1	1	1	1
Finance and real estate ind. (excl. owner occupied)	3	1	1	1	3	3
Insurance industries	2	1	1	1	2	2
Other business services industries	3	1	1	1	3	3
Professional business services industries	3	1	1	1	3	3
Advertising services	2	1	1	1	2	2
Educational service industries, private	3	1	1	1	3	3
Other health and social service industries	3	1	1	1	3	3
Accommodation, food and beverage service ind.	3	1	1	1	3	3
Motion picture and video industries	2	1	1	1	2	**2**
Other amusement and recreational services	2	1	1	1	2	2
Other personal service industries	2	1	1	1	2	2
Laundries and cleaners	3	1	1	1	3	3
Membership org. (excl. religious) & other serv. ind.	1	1	1	1	1	1

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The L level of aggregation contains 146 industries.

Table K: Ratings of labour productivity and unit labour cost at the M level of aggregation

	Value added	Hours	Jobs	Labour compensation	Labour productivity	Unit labour cost
Agricultural and related service industries	2	1	1	1	2	2
Fishing and trapping industries	2	2	2	1	2	2
Logging and forestry industries	1	1	1	1	1	1
Mining industries	1	1	1	1	1	1
Crude petroleum and natural gas industries	1	1	1	1	1	1
Quarry and sand pit industries	2	1	1	1	2	2
Services ind. incidental to mineral extraction	3	2	2	1	3	3
Food industries	1	1	1	1	1	1
Beverage industries	1	1	1	1	1	1
Tobacco products industry	1	1	1	1	1	1
Rubber products industries	1	1	1	1	1	1
Plastic products industries	1	1	1	1	1	1
Leather and allied products industries	1	1	1	1	1	1
Primary textile industries	1	1	1	1	1	1
Textile products industries	1	1	1	1	1	1
Clothing industries	1	1	1	1	1	1
Wood industries	1	1	1	1	1	1
Furniture and fixture industries	1	1	1	1	1	1
Paper and allied products industries	1	1	1	1	1	1
Printing, publishing and allied industries	1	1	1	1	1	1
Primary metal industries	1	1	1	1	1	1
Fabricated metal products industries	1	1	1	1	1	1
Machinery ind. (except electrical mach.)	1	1	1	1	1	1
Transportation equipment industries	1	1	1	1	1	1
Electrical and electronic products industries	1	1	1	1	1	1
Non-metallic mineral products industries	1	1	1	1	1	1
Refined petroleum and coal products ind.	2	2	2	1	2	2
Chemical and chemical products industries	1	1	1	1	1	1
Other manufacturing industries	1	1	1	1	1	1
Construction industries	2	1	1	1	2	2
Transportation industries	1	1	1	1	1	1
Pipeline transport industries	1	2	2	2	2	2
Storage and warehousing Industries	2	1	1	1	2	2
Communication industries	1	1	1	1	1	1
Other utility industries	1	1	1	1	1	1
Wholesale trade industries	1	1	1	1	1	1
Retail trade industries	1	1	1	1	1	1
Finance & real estate industries	3	1	1	1	3	3
Insurance industries	2	1	1	1	2	2
Business service industries	3	1	1	1	3	3
Educational service industries	3	1	1	1	3	3
Health and social service industries	3	1	1	1	3	3
Accommodation and food services ind.	3	1	1	1	3	3
Amusement and recreational service ind.	2	1	1	1	2	2
Personal & household service industries	3	1	1	1	2	2
Other service industries	1	1	1	1	1	1

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The M level of aggregation contains 46 industries.

Table L: Ratings of labour productivity and unit labour cost at the S level of aggregation						
	Value added	Hours	Jobs	Labour compensation	Labour productivity	Unit labour cost
Agricultural and related services ind.	2	1	1	1	2	2
Fishing and trapping industries	2	2	2	1	2	2
Logging and forestry industries	1	1	1	1	1	1
Mining, quarrying and oil well industries	1	1	1	1	1	1
Manufacturing industries	1	1	1	1	1	1
Construction industries	2	1	1	1	2	2
Transportation and storage industries	1	1	1	1	1	1
Communication and other utility ind.	1	1	1	1	1	1
Wholesale trade industries	1	1	1	1	1	1
Retail trade industries	1	1	1	1	1	1
Finance, insurance and real estate industries	3	1	1	1	3	3
Business service industries	3	1	1	1	3	3
Educational service industries	3	1	1	1	3	3
Health and social service ind.	3	1	1	1	3	3
Accommodation and food services ind.	3	1	1	1	3	3
Other service industries	2	1	1	1	2	2

Note: 1=reliable; 2=moderately reliable; 3=unreliable

The S level of aggregation contains 16 industries.