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AUXILIARY ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES

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George C. Marshall Space Flight Center, Huntsville, Alabama

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ABSTRACT

When sampling procedures on a random variable X are such that the resulting sample consists of N measured observations for which $X_\alpha < X < X_\beta$, and no information is know for $X < X_\alpha$ and $X > X_\beta$, the sample is said to be doubly truncated at the known terminals X_α and X_β. To calculate maximum likelihood estimates of the mean and standard deviation of a normally distributed population from doubly truncated samples, it is necessary to solve simultaneously a pair of rather complex nonlinear estimating equations. Since every estimate is a function of the sample values and must be regarded as an observed value of a certain random variable, there are no means of predicting in a given case, the true population value assumed by the estimate. The "goodness" of an estimate cannot be judged from individual values, but only from the distribution of the values which it will assume in the long run, i.e., from its sampling distribution. Some estimate of the variance of these sample estimates is needed. Values of auxiliary functions required to obtain, from doubly truncated normal samples, maximum likelihood estimates of parameters of the parent population and the asymptotic (large sample) variances and covariance of these estimates are given.

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AUXILIARY ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES

SUMMARY

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Restricted samples are those selected under conditions such that full observation is not permitted over some portion of the population range of values. The problem of estimating population parameters from samples obtained under such conditions is frequently encountered in scientific investigations, with restricted samples arising quite naturally in such fields as life testing, dosage and mortality response studies, biological assays, industrial production of some measurable item, quality control, and many areas of engineering. When a sample of a random variable X results in N measured observations for which $X_\alpha < X < X_\beta$, with no information known about $X < X_\alpha$ or $X > X_\beta$, the sample is described as being doubly truncated at the points X_α and X_β. To calculate maximum likelihood estimates for the mean and standard deviation of a normally distributed population from doubly truncated normal samples, it is necessary to solve simultaneously a pair of rather complex nonlinear estimating equations. In 1957, Cohen [2] gave methods employing a graph of estimation curves for reducing the computational labor required to obtain these solutions. In this paper, a graph is given and auxiliary functions are evaluated to further aid in obtaining solutions to the estimating equations. The asymptotic (large sample) variances and covariance of these estimates are also evaluated.

Author

I. INTRODUCTION

Restricted samples are those selected under conditions such that full observation is not permitted over some portion of the population range of values. Restricted sampling was dealt with in statistics as early as 1807 when Sir Francis Galton [4] encountered a singly truncated sample in studying the distribution of the time taken by trotting horses to run a measured course. Galton was only able to sample from the times of the horses that had qualified, since the times of horses failing to qualify were not recorded. The resulting samples were thus singly truncated on the right at the known terminus of t = 150 seconds, since to qualify it was necessary to better this time over a one-mile course.

Galton assumed his distributions to be normal and used sample modes as estimates of the population means. He simply plotted frequency polygons and located the required values by inspection. With modes equated to medians he located sample quartiles and used semi-interquartile ranges to estimate population standard deviations.

In 1902 Karl Pearson [9] recalculated Galton's estimates using a procedure for estimating parameters of a normal population by fitting least-square parabolas to logarithms of the truncated sample frequencies. Karl Pearson and Alice Lee [10] in 1908 used the method of moments [7] to obtain estimates of the mean and standard deviation for a singly truncated sample and gave tables to aid in the computation of these estimates.

Further publications on this problem did not appear until 1931, when R. A. Fisher [3] gave results obtained using the method of maximum likelihood [7], which he had introduced ten years earlier. Fisher considered samples of the same type as those studied by Pearson and Lee and demonstrated that, for the singly truncated normal case, the method of maximum likelihood gives estimates identical with those obtained by the method of moments. He also gave asymptotic variances and covariances of the maximum likelihood estimates.

The terms singly truncated, doubly truncated, singly censored, etc., used in connection with restricted sampling were not used by the early writers but were introduced rather slowly into the literature. Stevens [11] in 1937 was the first to consider the doubly censored sample, although he did not use this term. He published maximum likelihood estimating equations for normal population samples of the type which are now designated as singly and doubly censored samples with known terminals.

Additional results on this topic have been published by numerous authors including Hald, Birnbaum, Halperin, Gupta, Sampford, Des Raj, Bliss, Cohen and others. In 1949 Cohen [1] derived formulas whereby certain special functions required in solution of the problem as given by Pearson and Lee and by Fisher might be readily evaluated using only an ordinary table of areas and ordinates of the normal curve. Thus, it became possible to obtain the desired estimates with an improvement in accuracy whether or not the special tables required by the other two methods were available.

To estimate population parameters from restricted samples, the techniques most widely used are the method of moments, the method of maximum likelihood, and order statistics. Fisher [3] observed that, for singly truncated normal samples, the method of moments and the method of maximum likelihood yield identical estimates for the parameters. Hotelling [5] demonstrated that the two methods also lead to identical estimates in the case of truncated samples from multinormal distributions. Subsequently, Tukey [14] proved that, if any family of distributions admits a set of sufficient statistics [7], the family obtained by truncation to a fixed set or by fixed selection also admits the same set of sufficient statistics. Since the mean and variance are sufficient statistics for a multinormal distribution, the above results guarantee that the method of moments and the method of maximum likelihood lead to identical estimates of these parameters from doubly truncated normal samples. In this paper, the mean and standard deviation of a normally distributed population are estimated from doubly truncated normal samples by the method of maximum likelihood. This choice was governed by the above properties and by the fact that the method of order statistics seemed to offer no particular advantage. Further, similar results have been obtained and are available to check these results.

Cohen [2] gave graphical aids for obtaining solutions to maximum likelihood estimating equations for the mean and standard deviation of doubly truncated normal samples; this writer [6] modified Cohen's results and also gave tabular values of asymptotic (large sample) variance and covariance factors for these estimates. The latter work is extended in this report.

II. MAXIMUM LIKELIHOOD ESTIMATING EQUATIONS

The probability density function of a random variable x taken from a normally distributed population is given by

$$f(x) = (\sigma\sqrt{2\pi})^{-1} \exp\left[-(x - \mu)^2/2\sigma^2\right], \qquad -\infty \leqq x \leqq \infty. \tag{1}$$

Let x_o be a known fixed value of the random variable x and designate x_o as the left terminus or truncation point. Let $x_o + w$ be another known fixed value of the random variable x and designate it as the right terminus or truncation point; w is the range of truncation. Let n be the number of measured observations such that $x_o < x < x_o + w$. In population standard units, the left and right truncation points become, respectively,

$$\xi_1 = (x_o - \mu)/\sigma \quad \text{and} \quad \xi_2 = (x_o + w - \mu)/\sigma = \xi_1 + w/\sigma. \tag{2}$$

If $F(\xi)$ denotes the distribution function of ξ, the probability that a selected value of the random variable ξ has the requirements for inclusion in a sample that is doubly truncated at ξ_1 and ξ_2 becomes

$$P(\xi_1 \leqq \xi \leqq \xi_2) = F(\xi_2) - F(\xi_1), \tag{3}$$

where

$$F(\xi_i) = \int_{-\infty}^{\xi_i} \varphi(t)\, dt, \qquad i = 1,2$$

and

$$\varphi(t) = (\sqrt{2\pi}\,)^{-1} \exp\,(-t^2/2), \qquad t = (x - \mu)/\sigma,$$

the standardized normal variate. Equation (3) represents the area under the normal curve between ordinates erected at ξ_1 and ξ_2. The probability density function for this case can be written as

$$f(x) = \left[\sigma\sqrt{2\pi}\,(F_2 - F_1)\right]^{-1} \exp\left[-(x - \mu)^2/2\sigma^2\right], \qquad x_o \leqq x \leqq x_o + w, \tag{4}$$

where $F_i = F(\xi_i)$, $i = 1,2$. The likelihood function for (4) is

$$P = L(x_1,x_2,\ldots,x_n;\ \mu,\sigma) = \left[\sigma\sqrt{2\pi}\,(F_2 - F_1)\right]^{-n} \exp\left[-\sum_{i=1}^{n}(x_i - \mu)^2/2\sigma^2\right]. \tag{5}$$

Taking the logarithm of (5) for ease of differentiation gives

$$L = \ln P = \text{const.} - n \ln \sigma - n \ln (F_2 - F_1) - \left[\sum_{i=1}^{n} (x_i - \mu)^2/2\sigma^2 \right]. \quad (6)$$

For the likelihood function to be a maximum, it is necessary that

$$\frac{\partial L}{\partial \mu} = 0 = \frac{\partial L}{\partial \sigma} .$$

Taking the required first partials and equating to zero yields

$$\frac{\partial L}{\partial \mu} = -n(Z_1 - Z_2)/\sigma + \sum_{i=1}^{n} (x_i - \mu)/\sigma^2 = 0, \quad (7)$$

$$\frac{\partial L}{\partial \sigma} = -n/\sigma - n(\xi_1 Z_1 - \xi_2 Z_2)/\sigma + \sum_{i=1}^{n} (x_i - \mu)^2/\sigma^3 = 0, \quad (8)$$

where

$$Z_i = Z(\xi_i) = \varphi(\xi_i)/(F_2 - F_1), \quad i = 1, 2.$$

Let

$$m_k = \sum_{i=1}^{n} (x_i - x_o)^k/n$$

designate the k^{th} sample moment about x_o. From (2)

$$\sigma = w/(\xi_2 - \xi_1) \quad \text{and} \quad \mu = x_o - \sigma\xi_1. \quad (9)$$

Equations (7) and (8) may be written as

$$\sum_{i=1}^{n} (x_i - \mu)/n = \sigma(Z_1 - Z_2) \tag{10}$$

and

$$\sum_{i=1}^{n} (x_i - \mu)^2/n = \sigma^2(1 + \xi_1 Z_1 - \xi_2 Z_2). \tag{11}$$

Expanding the left-hand side of (10) and substituting from (9) results in

$$\bar{x} - x_o + \sigma\xi_1 = \sigma(Z_1 - Z_2), \tag{12}$$

and consequently

$$(Z_1 - Z_2 - \xi_1)/(\xi_2 - \xi_1) - m_1/w = 0, \tag{13}$$

which is the first estimating equation. Squaring (10) and subtracting the result from (11) gives

$$\sum_{i=1}^{n} (x_i - \mu)^2/n - \left[\sum_{i=1}^{n} (x_i - \mu)/n\right]^2 = \sigma^2\left[1 + \xi_1 Z_1 - \xi_2 Z_2 - (Z_1 - Z_2)^2\right]. \tag{14}$$

Expansion and simplification of the left-hand side of (14) yields

$$\sum_{i=1}^{n} x_i^2/n - \bar{x}^2 = s^2,$$

the sample variance. From (9),

$$\sigma^2 = w^2/(\xi_2 - \xi_1)^2.$$

Hence, equation (14) reduces to

$$[1 + \xi_1 Z_1 - \xi_2 Z_2 - (Z_1 - Z_2)^2]/(\xi_2 - \xi_1)^2 - s^2/w^2 = 0, \tag{15}$$

which is the second estimating equation.

For any given sample of size n, the quantities m_1/w ($m_1 = \bar{x} - x_o$) and s^2/w^2 may be computed and the estimating equations

$$(Z_1 - Z_2 - \hat{\xi}_1)/(\hat{\xi}_2 - \hat{\xi}_1) - m_1/w = 0 \tag{16}$$

$$[1 + \hat{\xi}_1 Z_1 - \hat{\xi}_2 Z_2 - (Z_1 - Z_2)^2]/(\hat{\xi}_2 - \hat{\xi}_1)^2 - s^2/w^2 = 0 \tag{17}$$

solved simultaneously for $\hat{\xi}_1$ and $\hat{\xi}_2$. Consequently, with these values determined, $\hat{\sigma}$ and $\hat{\mu}$ follow from (9) as

$$\left.\begin{aligned} \hat{\sigma} &= w/(\hat{\xi}_2 - \hat{\xi}_1) \\ \hat{\mu} &= x_o - \hat{\sigma}\hat{\xi}_1 \end{aligned}\right\} . \tag{18}$$

(The caret (^) serves to distinguish maximum likelihood estimators or estimates from the parameters being estimated.) Except for slight changes in notation, equations (16) and (17) correspond to those given by Cohen [2].

III. SOLUTION OF THE ESTIMATING EQUATIONS

The simultaneous solution of equations (16) and (17) is often a laborious task since they are nonlinear and neither equation can be expressed explicitly as a function of the other. Hence, their solution may require some type of iterative procedure or Newton-Raphson method [15]. Employing the notation

$$H_1(\xi_1,\xi_2) = (Z_1 - Z_2 - \xi_1)/(\xi_2 - \xi_1), \tag{19}$$

$$H_2(\xi_1,\xi_2) = [1 + \xi_1 Z_1 - \xi_2 Z_2 - (Z_1 - Z_2)^2]/(\xi_2 - \xi_1)^2, \tag{20}$$

estimating equations (16) and (17) have the form

$$F_1(\xi_1,\xi_2) = H_1(\xi_1,\xi_2) - k_1 = 0, \tag{21}$$

$$F_2(\xi_1,\xi_2) = H_2(\xi_1,\xi_2) - k_2 = 0, \tag{22}$$

and, hence, represent two families of curves for various values of k_1 and k_2. For a given sample, k_1 and k_2 are constants. If the substitution $\xi_1 = -\xi_2$ and $\xi_2 = -\xi_1$ is made, (18) becomes

$$H_1(-\xi_2,-\xi_1) = -(Z_1 - Z_2 - \xi_2)/(\xi_2 - \xi_1).$$

Adding and subtracting ξ_1 in the numerator and making an algebraic simplification gives

$$H_1(-\xi_2,-\xi_1) = 1 - [(Z_1 - Z_2 - \xi_1)/(\xi_2 - \xi_1)] = 1 - H_1(\xi_1,\xi_2), \tag{23}$$

which shows the graph of $H_1(\xi_1,\xi_2) - k = 0$ to be a reflection of the graph of $H_1(\xi_1,\xi_2) - (1 - k) = 0$ about the line $\xi_1 + \xi_2 = 0$. Thus, in plotting $H_1(\xi_1,\xi_2)$, one-half the points may be obtained by reflection.

Let $\xi_1 = -\xi_2$ and $\xi_2 = -\xi_1$ in (20). Then,

$$H_2(-\xi_2,-\xi_1) = [1 - \xi_2 Z_2 + \xi_1 Z_1 - (Z_2 - Z_1)^2]/(-\xi_1 + \xi_2)^2 = H_2(\xi_1,\xi_2), \quad (24)$$

which shows the graph of $H_2(\xi_1,\xi_2) - k = 0$ to be symmetric with respect to the graph of $H_2(-\xi_2,-\xi_1) - (1 - k) = 0$ about the line $\xi_1 + \xi_2 = 0$. In plotting $H_2(\xi_1,\xi_2)$, one-half the points may be obtained by symmetry.

As an aid to solving (16) and (17), Cohen [2] graphed the families of curves given by (21) and (22). His procedure was to compute $H_1 = (\bar{x} - x_o)/w$ and $H_2 = s^2/w^2$ from sample data and then read $\hat{\xi}_1$ and $\hat{\xi}_2$ as coordinates of the intersection point of the two curves. These initial estimates served as first approximations for subsequent improvement by an iterative procedure. Cohen's values of $H_1(\xi_1,\xi_2)$ and $H_2(\xi_1,\xi_2)$ were obtained from abbreviated tables compiled by Thompson, Friedman and Garelis [13] who tabulated their values at intervals of 0.5 for the arguments ξ_1 and ξ_2. An extension of these tables [6] was used to plot curves of ξ_1 = const. against the arguments $H_1(\xi_1,\xi_2)$ and $H_2(\xi_1,\xi_2)$, the inverse of the presentation used by Cohen [2]. An improvement in accuracy of the initial estimates was obtained by this procedure.

In an effort to further improve the accuracy of the initial estimates of solutions to the estimating equations, new values of $H_1(\xi_1,\xi_2)$ and $H_2(\xi_1,\xi_2)$ were computed and rounded to 10D for the arguments

$$\xi_1 = -5.0(0.1) -0.1$$

and

$$\xi_2 = \xi_1 + 0.5(0.1) -\xi_1.$$

The computations were performed on an IBM 1620 computer using input values (to 15D) of the normal curve ordinates and area [9]. Functional values of $Z_1(\xi_1,\xi_2)$ and $Z_2(\xi_1,\xi_2)$ were also computed and, together with $H_1(\xi_1,\xi_2)$ and $H_2(\xi_1,\xi_2)$ values, rounded to 10D prior to computer output on punched cards, which were machine listed for inclusion in Table I. For the family of curves ξ_1 = const., the tabulated values of $H_1(\xi_1,\xi_2)$ and $H_2(\xi_1,\xi_2)$ were plotted and appear as Figure 1, which may be used to

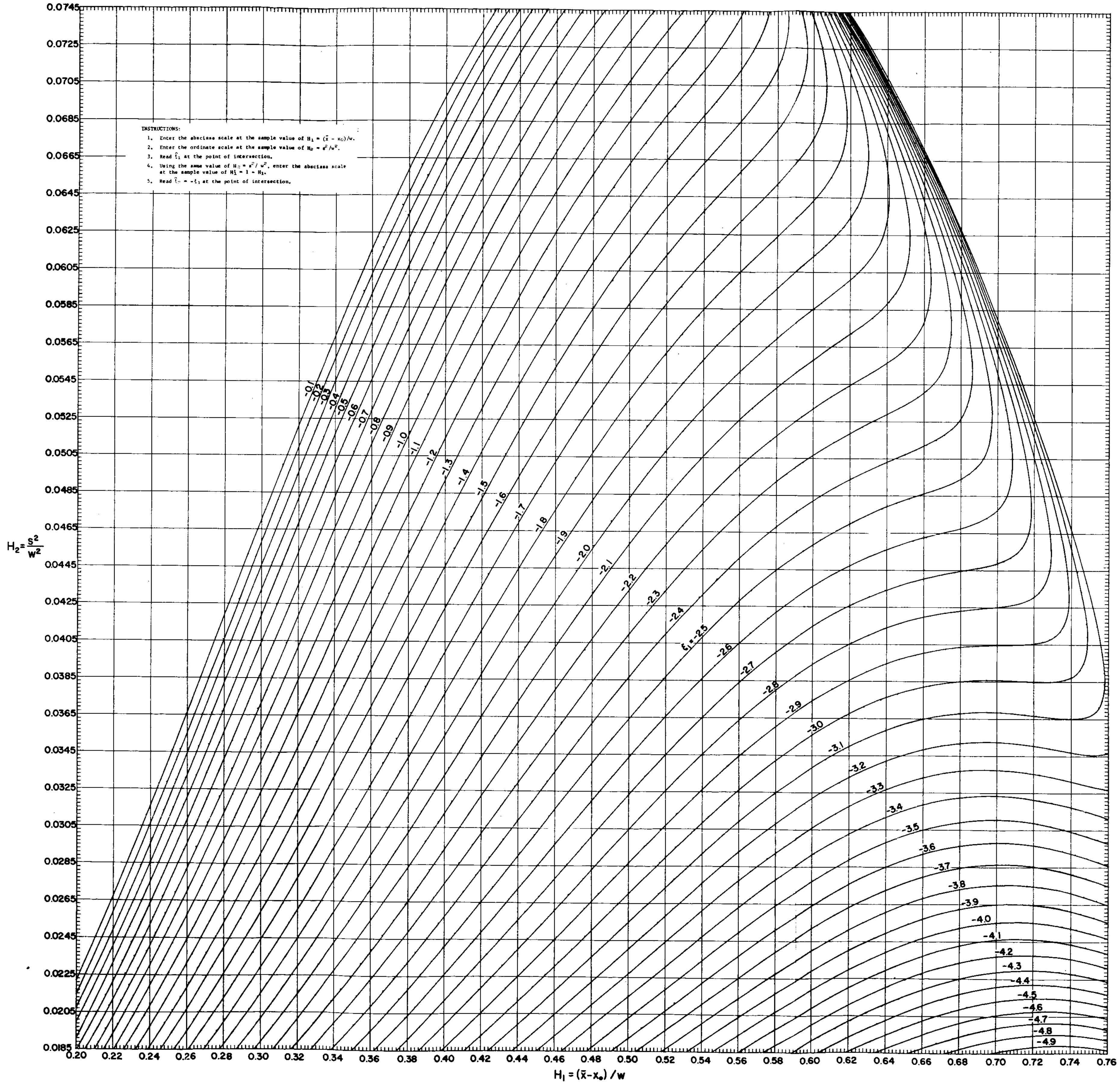

FIG. 1. ESTIMATION CURVES FOR DOUBLY TRUNCATED NORMAL SAMPLES

obtain initial values of the estimates $\hat{\xi}_1$ and $\hat{\xi}_2$. Sample values of $H_1 = (\bar{x} - x_0)/w$ and $H_2 = s^2/w^2$ are computed and used to enter Figure 1. $\hat{\xi}_1$ is read at the intersection point of these values, and $\hat{\xi}_2 = -\hat{\xi}_1$ is read at the intersection point of $H_1' = 1 - H_1$ and H_2. The values of $\hat{\xi}_1$ and $\hat{\xi}_2$ obtained in this manner are then used to solve the estimating equations (18) or, if greater accuracy is required, they may be used as first approximations to be improved upon by an iterative procedure.

IV. VARIANCE OF THE ESTIMATES

The asymptotic (large sample) variance-covariance matrix of the estimates $\hat{\mu}$ and $\hat{\sigma}$ obtained from (18), is found by inverting the matrix whose elements are negatives of the expected value of the second order partial derivatives of logarithms of the likelihood function (6), i.e., by inverting the information matrix

$$I(\mu,\sigma) = \begin{pmatrix} -E\left[\frac{\partial^2 L}{\partial \mu^2}\right] & -E\left[\frac{\partial^2 L}{\partial \mu\, \partial \sigma}\right] \\ -E\left[\frac{\partial^2 L}{\partial \mu\, \partial \sigma}\right] & -E\left[\frac{\partial^2 L}{\partial \sigma^2}\right] \end{pmatrix}, \tag{25}$$

where E[ ] denotes the expected value of the quantity in brackets. Since,

$$\frac{\partial \xi_i}{\partial \mu} = -\frac{1}{\sigma}, \qquad \frac{\partial \xi_i}{\partial \sigma} = -\frac{\xi_i}{\sigma},$$

$$\frac{\partial F_i}{\partial \mu} = -\frac{\varphi_i}{\sigma}, \qquad \frac{\partial F_i}{\partial \sigma} = -\frac{\xi_i\, \varphi_i}{\sigma},$$

$$\frac{\partial Z_i}{\partial \mu} = \frac{\xi_i Z_i - Z_i(Z_1 - Z_2)}{\sigma}, \qquad \frac{\partial Z_i}{\partial \sigma} = \frac{\xi_i^2 Z_i - Z_i(\xi_1 Z_1 - \xi_2 Z_2)}{\sigma},$$

$$(i = 1,2)$$

it follows from (7) and (8) that

$$\frac{\partial^2 L}{\partial \mu^2} = \frac{-n}{\sigma^2} [1 + \xi_1 Z_1 - \xi_2 Z_2 - (Z_1 - Z_2)^2], \tag{26}$$

$$\frac{\partial^2 L}{\partial \sigma^2} = \frac{-n}{\sigma^2} [-(1 + \xi_1 Z_1 - \xi_2 Z_2)^2 + \xi_1^3 Z_1 - \xi_2^3 Z_2] - \frac{3}{\sigma^2} \sum_{i=1}^{n} (x_i - \mu)^2/\sigma^2, \tag{27}$$

$$\frac{\partial^2 L}{\partial \mu \, \partial \sigma} = \frac{-n}{\sigma^2} [-(Z_1 - Z_2)(1 - \xi_1 Z_1 - \xi_2 Z_2) + \xi_1^2 Z_1 - \xi_2^2 Z_2] - \frac{2}{\sigma^2} \sum_{i=1}^{n} (x_i - \mu)/\sigma. \tag{28}$$

Inspection reveals that the only expected values needed are $E[(x_i - \mu)^2/\sigma^2]$ in (27) and $E[(x_i - \mu)/\sigma]$ in (28), since these are the only quantities which contain the variate x. It can be shown that

$$E[(x_i - \mu)^2/\sigma^2] = 1 + \xi_1 Z_1 - \xi_2 Z_2$$

and

$$E[(x_i - \mu)/\sigma] = Z_1 - Z_2.$$

From these results, the required negatives of the expected values of the second order partial derivatives of the likelihood function (6) are obtained as

$$\left.\begin{aligned} -E\left[\frac{\partial^2 L}{\partial \mu^2}\right] &= \frac{n}{\hat{\sigma}^2} \hat{\varphi}_{11} \\ -E\left[\frac{\partial^2 L}{\partial \sigma^2}\right] &= \frac{n}{\hat{\sigma}^2} \hat{\varphi}_{22} \\ -E\left[\frac{\partial^2 L}{\partial \mu \, \partial \sigma}\right] &= \frac{n}{\hat{\sigma}^2} \hat{\varphi}_{12} \end{aligned}\right\}, \tag{29}$$

where

$$\hat{\varphi}_{ij} = \varphi_{ij}(\hat{\xi}_1, \hat{\xi}_2), \qquad i,j = 1,2$$

and

$$\left.\begin{aligned}
\hat{\varphi}_{11} &= 1 + \hat{\xi}_1 Z_1 - \hat{\xi}_2 Z_2 - (Z_1 - Z_2)^2 \\
\hat{\varphi}_{12} &= (Z_1 - Z_2)[1 - (\hat{\xi}_1 Z_1 - \hat{\xi}_2 Z_2)] + \hat{\xi}_1^2 Z_1 - \hat{\xi}_2 Z_2 \\
\hat{\varphi}_{22} &= 2 + (\hat{\xi}_1 Z_1 - \hat{\xi}_2 Z_2)[1 - (\hat{\xi}_1 Z_1 - \hat{\xi}_2 Z_2)] + \hat{\xi}_1^3 Z_1 - \hat{\xi}_2^3 Z_2
\end{aligned}\right\} . \tag{30}$$

Substitution in (25) gives

$$I(\hat{\mu}, \hat{\sigma}) = \begin{pmatrix} \frac{n}{\hat{\sigma}^2} \hat{\varphi}_{11} & \frac{n}{\hat{\sigma}^2} \hat{\varphi}_{12} \\ \frac{n}{\hat{\sigma}^2} \hat{\varphi}_{12} & \frac{n}{\hat{\sigma}^2} \hat{\varphi}_{22} \end{pmatrix} . \tag{31}$$

The asymptotic (large sample) variance-covariance matrix is found by inverting (31). Hence,

$$V(\hat{\mu}, \hat{\sigma}) = I^{-1}(\hat{\mu}, \hat{\sigma}) = \begin{pmatrix} \frac{\hat{\sigma}^2}{n} \hat{\mu}_{11} & \frac{\hat{\sigma}^2}{n} \hat{\mu}_{12} \\ \frac{\hat{\sigma}^2}{n} \hat{\mu}_{12} & \frac{\hat{\sigma}^2}{n} \hat{\mu}_{22} \end{pmatrix} , \tag{32}$$

with

$$\left.\begin{aligned} \mathrm{Var}(\hat{\mu}) &\sim (\hat{\sigma}^2/n)\ \hat{\mu}_{11} \\ \mathrm{Var}(\hat{\sigma}) &\sim (\hat{\sigma}^2/n)\ \hat{\mu}_{22} \\ \mathrm{Cov}(\hat{\mu},\hat{\sigma}) &\sim (\hat{\sigma}^2/n)\ \hat{\mu}_{12} \end{aligned}\right\} \tag{33}$$

and

$$\hat{\mu}_{ij} = \mu_{ij}(\hat{\xi}_1,\hat{\xi}_2), \qquad i,j = 1,2,$$

where

$$\left.\begin{aligned} \hat{\mu}_{11} &= \hat{\varphi}_{22}/(\hat{\varphi}_{11}\hat{\varphi}_{22} - \hat{\varphi}_{12}^2) \\ \hat{\mu}_{12} &= -\hat{\varphi}_{12}/(\hat{\varphi}_{11}\hat{\varphi}_{22} - \hat{\varphi}_{12}^2) \\ \hat{\mu}_{22} &= \hat{\varphi}_{11}/(\hat{\varphi}_{11}\hat{\varphi}_{22} - \hat{\varphi}_{12}^2) \end{aligned}\right\}. \tag{34}$$

The coefficient of correlation between the variance estimates may be expressed as

$$\rho(\hat{\mu},\hat{\sigma}) = \hat{\mu}_{12}/\sqrt{\hat{\mu}_{11}\hat{\mu}_{22}}\ . \tag{35}$$

If in (30) the substitution $\hat{\xi}_1 = -\hat{\xi}_2$ and $\hat{\xi}_2 = -\hat{\xi}_1$ is made, it follows that

$$\left.\begin{aligned} \mu_{11}(-\hat{\xi}_2,-\hat{\xi}_1) &= \mu_{11}(\hat{\xi}_1,\hat{\xi}_2) \\ \mu_{12}(-\hat{\xi}_2,-\hat{\xi}_1) &= -\mu_{12}(\hat{\xi}_1,\hat{\xi}_2) \\ \mu_{22}(-\hat{\xi}_2,-\hat{\xi}_1) &= \mu_{22}(\hat{\xi}_1,\hat{\xi}_2) \\ \rho(-\hat{\xi}_2,-\hat{\xi}_1) &= -\rho(\hat{\xi}_1,\hat{\xi}_2) \end{aligned}\right\}. \tag{36}$$

To simplify calculation of the asymptotic (large sample) variances and covariance of the estimates $\hat{\mu}$ and $\hat{\sigma}$, the auxiliary functions $\mu_{ij}(\hat{\xi}_1,\hat{\xi}_2)$ $i,j = 1,2$, and $\rho(\hat{\xi}_1,\hat{\xi}_2)$ were evaluated on the IBM 1620 computer and rounded to 10D for the same arguments used to evaluate the functions of Section III. Likewise, these values were machine listed from punched cards and are included in Table I. With the exception of one earlier but less extensive table [6], previous tabulation of these variance factors for doubly truncated normal samples has not been seen by this writer.

For any doubly truncated sample, after reading $\hat{\xi}_1$ and $\hat{\xi}_2$ from Figure 1, enter the appropriate columns of Table I and interpolate to obtain the required values of $\mu_{ij}(\hat{\xi}_1,\hat{\xi}_2)$ $i,j = 1,2$. The asymptotic variances and covariance may then be approximated with (33), the estimate of $\hat{\sigma}^2$, and the sample size n. Similarly, $\rho(\hat{\mu},\hat{\sigma})$ may be approximated from (35).

V. EFFICIENCY OF THE ESTIMATES

The question of joint efficiency of the estimates $\hat{\mu}$ and $\hat{\sigma}$ arises naturally at this point. Swamy [12] demonstrates that the joint efficiency of BAN (best asymptotically normal) estimate [7] of μ and σ based on incomplete (singly or doubly truncated) samples of size n depends on the points of truncation ξ_1 and ξ_2, monotonically increasing to the joint efficiency of BAN estimates of μ and σ based on complete samples of the same size as the distance between the points of truncation increases. Since maximum likelihood estimates are also BAN estimates, it follows that the maximum likelihood estimates of μ and σ based on a doubly truncated sample are jointly less efficient than those based on the complete sample for fixed n.

The joint efficiency of the estimates $\hat{\mu}$ and $\hat{\sigma}$ based on doubly truncated samples is defined as

$$e_{DT}(\xi_1,\xi_2) = \frac{|I_{DT}(\mu,\sigma)|}{|I(\mu,\sigma)|} ,$$

which is the ratio of the determinantal value of the information matrix (25) for a doubly truncated sample of size n to the determinantal value of this matrix for a complete sample of size n. In terms of the μ_{ij} notation of Section IV, efficiency may be expressed as

$$e_{DT}(\xi_1,\xi_2) = \frac{|M(\xi_1,\xi_2)|}{|M_{DT}(\xi_1,\xi_2)|} , \tag{37}$$

where

$$M(\xi_1, \xi_2) = \begin{pmatrix} \mu_{11}(\xi_1, \xi_2) & \mu_{12}(\xi_1, \xi_2) \\ \mu_{12}(\xi_1, \xi_2) & \mu_{22}(\xi_1, \xi_2) \end{pmatrix}.$$

For a complete sample of size n,

$$M(\xi_1, \xi_2) = \begin{pmatrix} 1 & 0 \\ 0 & 0.5 \end{pmatrix} \quad \text{and} \quad |M(\xi_1, \xi_2)| = 0.5.$$

Hence,

$$e_{DT}(\xi_1, \xi_2) = \frac{0.5}{|M_{DT}(\xi_1, \xi_2)|} = \frac{0.5}{\mu_{11}\mu_{22} - \mu_{12}^2} \tag{38}$$

and this quantity may be evaluated directly from Table I.

VI. ILLUSTRATIVE EXAMPLE

To illustrate estimation of μ and σ from a doubly truncated normal sample, the methods developed here will be applied to the example given by Cohen [2].

The entire production of a certain bushing is sorted through go, no-go gauges, with the result that items of diameter in excess of 0.6015 inches and those less than 0.5985 inches are discarded. A random sample of 75 bushings selected from the screened population resulted in

$$\bar{x} = 6.0014933 \times 10^{-1}, \qquad s^2 = 3.71187 \times 10^{-7},$$

$$x_0 = 5.985 \times 10^{-1}, \qquad w = 3.0 \times 10^{-3}.$$

Thus,

$$H_1 = (\bar{x} - x_0)/w = 5.49777 \times 10^{-1},$$

$$H_1' = 1 - H_1 = 4.5022 \times 10^{-1},$$

$$H_2 = s^2/w^2 = 4.1243 \times 10^{-2}.$$

Interpolation in Figure 1 gives

$$\hat{\xi}_1 = -2.525 \quad \text{and} \quad \hat{\xi}_2 = 2.000$$

as estimates of ξ_1 and ξ_2. Substituting in (18) yields

$$\hat{\sigma} = w/(\hat{\xi}_2 - \hat{\xi}_1) = 0.0030/4.525 = 6.62983 \times 10^{-4}$$

$$\hat{\mu} = x_o - \hat{\sigma}\hat{\xi}_1 = 0.5985 - (6.62983 \times 10^{-4})(-2.525) = 6.0017403 \times 10^{-1}.$$

From Table I, variance and covariance factors and the correlation between the estimates are interpolated as

$$\mu_{11}(\hat{\xi}_1,\hat{\xi}_2) = 1.21710, \quad \mu_{12}(\hat{\xi}_1,\hat{\xi}_2) = 0.17458,$$

$$\mu_{22}(\hat{\xi}_1,\hat{\xi}_2) = 0.93069, \quad \rho(\hat{\mu},\hat{\sigma}) = 0.16411.$$

From (38), the joint efficiency of the estimates $\hat{\mu}$ and $\hat{\sigma}$ is

$$e_{DT}(-2.525,2.000) = 0.5/1.10226 = 0.4536.$$

With $\hat{\sigma}^2 = 4.39546 \times 10^{-7}$ and $\mu = 75$, the variances and covariance of the estimates $\hat{\mu}$ and $\hat{\sigma}$ are approximated by (33) as

$$V(\hat{\mu}) \sim 7.13295 \times 10^{-9}, \quad V(\hat{\sigma}) \sim 5.45441 \times 10^{-9},$$

$$\text{Cov}\ (\hat{\mu},\hat{\sigma}) \sim 1.02315 \times 10^{-9}.$$

Standard errors of the estimates follow as

$$\sigma(\hat{\mu}) = \sqrt{V(\hat{\mu})} \sim 8.44568 \times 10^{-5},$$

$$\sigma(\hat{\sigma}) = \sqrt{V(\hat{\sigma})} \sim 7.38540 \times 10^{-5}.$$

VII. CONCLUSIONS

The auxiliary estimating functions given in equations (19) and (20) considerably reduce the computational effort required to estimate the parameters μ and σ of a normal population from doubly truncated samples. Figure 1 and Table I should prove adequate for obtaining these maximum likelihood estimates in most practical situations. Reliability of these estimates can be obtained from equation (33) and the auxiliary estimating functions (34) and (35), also tabulated in Table I. The joint efficiency of $\hat{\mu}$ and $\hat{\sigma}$ follows from (38).

To evaluate the auxiliary functions (19), (20), (34) and (35) only areas and ordinates of the normal curve are required. Such tables [8] are readily available; however, if computer subroutines are available to calculate the normal areas and ordinates, evaluation of the auxiliary functions could be reduced to simply specifying values of the function arguments ξ_1 and ξ_2 as input to a computer program. Thus, the effort required to obtain the parameter estimates would be further reduced and, through iteration, the accuracy of the estimates could be specified for any given situation.

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TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES

$\xi_1=-5.0$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-4.5	.4778878866	5.1377789698	.6802178337	.0639240960	324[illegible]72.7246479395	34396.5579479146	3651.5004146506	.9999034519
-4.4	.2900411124	4.8659764305	.7067744698	.0580741572	166439.7724436[illegible]30	17919.7360735795	1929.8827771883	.9998562994
-4.3	.1801373777	4.6690913927	.7300656928	.0524447983	96461.3397211438	10543.4399115013	1152.8866224243	.9997982739
-4.2	.1138455028	4.5135636678	.7503522938	.0472186869	61079.8194167360	6783.1980651131	753.7140357663	.9997290824
-4.1	.0729826750	4.3818315768	.7679456647	.0424904092	41360.7875506295	4670.7245099803	527.8188504188	.9996486972
-4.0	.0473710029	4.2642017835	.7831692194	.0382902872	295[illegible].7642566[illegible]30	339[illegible].8377783468	390.0243601822	.9995573396
-3.9	.0310966132	4.1551296658	.7963335886	.0346066213	21931.0781556235	2566.8672528143	300.7599509449	.9994553924
-3.8	.0206312904	4.0513639309	.8077227996	.0314033793	16842.5020157308	2009.1977324758	239.9989494211	.9993432998
-3.7	.0138282662	3.9509635760	.8175882232	.0286328121	13277.1679493389	1615.5232077027	196.8781189607	.9992214564
-3.6	.0093609203	3.8527544467	.8261474812	.0262436776	10687.9759337949	1327.4043993281	165.1588015583	.9990901047
-3.5	.0063988292	3.7560195293	.8335861999	.0241361386	8748.5582345535	1109.8318405143	141.0834683472	.9989492539
-3.4	.0044163141	3.6603184411	.8400611706	.0224143621	7257.4598068573	940.9725057666	122.2963119520	.9987986212
-3.3	.0030772183	3.5653803975	.8457040122	.0208876400	6083.7725472758	806.7370437778	107.2692404319	.9986375965
-3.2	.0021645435	3.4710398726	.8506248172	.0195706253	5141.7216640636	697.7629047483	94.9819952055	.9984652236
-3.1	.0015369524	3.3771974819	.8549155108	.0184330807	4372.7924432556	607.6687397934	84.7364017992	.9982801933
-3.0	.0011015908	3.2837959708	.8586528100	.0174493915	3736.2463344665	532.0069958158	76.0444892410	.9980808401
-2.9	.0007969436	3.1908053544	.8619007568	.0165979929	3203.0936035640	467.6151503831	68.5588963276	.9978651369
-2.8	.0005819219	3.0982136592	.8647128467	.0158607968	2752.2726785017	412.2024299230	62.0283184794	.9976306642
-2.7	.0004288589	3.0060211260	.8671337969	.0152226597	2368.1735189145	364.0799663080	56.2682435575	.9973746892
-2.6	.0003189768	2.9142365712	.8692010023	.0146709122	2038.9952210203	321.9808544584	51.1412974972	.9970939325
-2.5	.0002394313	2.8228751077	.8709457294	.0141949522	1755.6431018081	284.9379880144	46.5437881265	.9967847217
-2.4	.0001813681	2.7319567271	.8723940927	.0137859013	1510.9723925931	252.1998550870	42.3963397600	.9964428291
-2.3	.0001386371	2.6415054374	.8735678517	.0134363164	1299.2656999670	223.1717908866	38.6372891615	.9960634122
-2.2	.0001069339	2.5515487592	.8744850624	.0131399506	1115.8571853290	197.3745675859	35.2179770342	.9956409154
-2.1	.0000832237	2.4621174583	.8751606088	.0128915543	956.9239918679	174.4149648853	32.0993628914	.9951689492
-2.0	.0000653508	2.3732454357	.8756066383	.0126867113	819.2016695760	153.9647072445	29.2495752958	.9946401449
-1.9	.0000517727	2.2849697243	.8758329189	.0125217031	699.9510555269	135.7452934050	26.6421299693	.9940459789
-1.8	.0000413782	2.1973305587	.8758471311	.0123933957	596.9111660113	119.5170031022	24.2546287203	.9933765625
-1.7	.0000333606	2.1103714961	.8756551104	.0122991455	507.7374252782	105.0708784566	22.0678064561	.9926203896
-1.6	.0000271304	2.0241395730	.8752610463	.0122367201	430.9478118858	92.2228311836	20.0648312914	.9917640335
-1.5	.0000222540	1.9386854850	.8746676483	.0122042314	364.8817433947	80.8092727600	18.2307891981	.9907917839
-1.4	.0000184099	1.8540637828	.8738762853	.0122000773	308.1680738536	70.6838378238	16.5523034497	.9896852097
-1.3	.0000153586	1.7703330748	.8728871037	.0122228917	259.5996616471	61.7148938353	15.0172526319	.9884226339
-1.2	.0000129202	1.6875562288	.8716991293	.0122714997	218.1127221412	53.7836173680	13.6145607538	.9869785004
-1.1	.0000109587	1.6058005651	.8703103573	.0123448763	182.7697097409	46.7824798414	12.3340400974	.9853226134
-1.0	.0000093708	1.5251380317	.8687178348	.0124421091	152.7448454801	40.6140302192	11.1662726279	.9834192210
-0.9	.0000080774	1.4456453498	.8669177384	.0125623620	127.3116664723	35.1898942337	10.1025195746	.9812259149
-0.8	.0000070176	1.3674041194	.8649054520	.0127048398	105.8321556981	30.4299326709	9.1346515719	.9786923125
-0.7	.0000061444	1.2905008683	.8626756456	.0128687536	87.7471379517	26.2615177230	8.2550937848	.9757584833
-0.6	.0000054210	1.2150270302	.8602223615	.0130532852	72.5677165837	22.6189982114	7.4567819359	.9723530837
-0.5	.0000048186	1.1410788305	.8575391085	.0132575517	59.8675875623	19.4426329260	6.7331262491	.9683911658
-0.4	.0000043146	1.0687570608	.8546189682	.0134805680	49.2761103462	16.6790773671	6.0779811289	.9637716342
-0.3	.0000038910	.9981667177	.8514547177	.0137212101	40.4720448366	14.2799134790	5.4856189856	.9583743519
-0.2	.0000035336	.9294164813	.8480389692	.0139781771	33.1778842466	12.2017150304	4.9507070535	.9520569324
-0.1	.0000032308	.8626180089	.8443643310	.0142499538	27.1547278917	10.4055434685	4.4682863674	.9446513309
0.0	.0000029734	.7978850182	.8404235910	.0145347750	22.1976476487	8.8565706054	4.0337522991	.9359604543
0.1	.0000027541	.7353321390	.8362099245	.0148305925	18.1315085193	7.5237255637	3.6428362298	.9257551847
0.2	.0000025666	.6750735139	.8317171255	.0151350474	14.8072083562	6.3793641494	3.2915980617	.9137724508
0.3	.0000024060	.6172211399	.8269398615	.0154454490	12.0983050278	5.3989593207	2.9763593680	.8997153017
0.4	.0000022683	.5618829495	.8218739479	.0157587647	9.8980015989	4.5608117499	2.6937870476	.8832563265
0.5	.0000021501	.5091606449	.8165166373	.0160716216	8.1164618165	3.8457796867	2.4407774031	.8640461497
0.6	.0000020485	.4591473180	.8108669162	.0163803249	6.6784295468	3.2370274497	2.2144905981	.8417289947
0.7	.0000019613	.4119249062	.8049257991	.0166808940	5.5211269610	2.7197919347	2.0123254740	.8159672011
0.8	.0000018864	.3675615586	.7986966082	.0169691204	4.5924073375	2.2811665472	1.8319047258	.7864757777
0.9	.0000018221	.3261090083	.7921852227	.0172406459	3.8491393819	1.9099019574	1.6710604499	.7530662332
1.0	.0000017671	.2876000689	.7854002830	.0174910642	3.2558010320	1.5962230493	1.5278200796	.7156959221
1.1	.0000017201	.2520463902	.7783533328	.0177160402	2.7832618169	1.3316614030	1.4003927343	.6745153805
1.2	.0000016800	.2194366170	.7710588811	.0179114456	2.4077339957	1.1089026078	1.2871560033	.6299028294
1.3	.0000016461	.1897350956	.7635343731	.0180735037	2.1098739080	.9216476720	1.1866431872	.5824740807
1.4	.0000016173	.1628812586	.7558000560	.0181989349	1.8740162198	.7644877572	1.0975310186	.5330592213
1.5	.0000015932	.1387897931	.7478787385	.0182850930	1.6875250292	.6327914467	1.0186278778	.4826448872
1.6	.0000015729	.1173516559	.7397954420	.0183300837	1.5402470889	.5226037350	.9488625185	.4322904736
1.7	.0000015561	.0984359492	.7315769562	.0183328531	1.4240537003	.4305559205	.8872733159	.3830343053
1.8	.0000015421	.0818926094	.7232513136	.0182932406	1.3324591042	.3537855859	.8329980456	.3358081246
1.9	.0000015307	.0675558044	.7148472067	.0182119878	1.2603044370	.2898658585	.7852642044	.2913744270
2.0	.0000015213	.0552478789	.7063933775	.0180907036	1.2034975104	.2367431646	.7433798818	.2502934294
2.1	.0000015138	.0447836426	.6979180100	.0179317862	1.1587998047	.1926827179	.7067251951	.2129184372
2.2	.0000015077	.0359747766	.6894481571	.0177383078	1.1236531244	.1562210131	.6747443047	.1794129158
2.3	.0000015028	.0286341214	.6810092303	.0175138709	1.0960393499	.1261246354	.6469380301	.1497805806
2.4	.0000014990	.0225796341	.6726245763	.0172624472	1.0743676169	.1013547357	.6228570913	.1239005928
2.5	.0000014960	.0176378306	.6643151554	.0169882116	1.0573840706	.0810365628	.6020960037	.1015621201
2.6	.0000014937	.0136465824	.6560993304	.0166953814	1.0441000744	.0644334869	.5842876541	.0824949221
2.7	.0000014919	.0104571926	.6479927661	.0163880722	1.0337353960	.0509249862	.5690985807	.0663945566
2.8	.0000014905	.0079357307	.6400084307	.0160701767	1.0256734665	.0399881077	.5562249674	.0529420865
2.9	.0000014895	.0059636612	.6321566871	.0157452714	1.0194262974	.0311819483	.5453893495	.0418188423
3.0	.0000014887	.0044378403	.6244454561	.0154165524	1.0146070665	.0241347325	.5363379985	.0327170597
3.1	.0000014882	.0032699840	.6168804326	.0150867997	1.0109087480	.0185330963	.5288389318	.0253472177
3.2	.0000014877	.0023857282	.6094653365	.0147583662	1.0080874675	.0141132177	.5226804608	.0194427997
3.3	.0000014874	.0017234026	.6022021789	.0144331887	1.0059495243	.0106534678	.5176701668	.0147630583
3.4	.0000014872	.0012326348	.5950915300	.0141128131	1.0043412404	.0079682896	.5136341785	.0110942387
3.5	.0000014871	.0008728860	.5881327766	.0137984319	1.0031409782	.0059030560	.5104166154	.0082496119
3.6	.0000014870	.0006119995	.5813243590	.0134909275	1.0022528159	.0043296947	.5078790716	.0060685995
3.7	.0000014869	.0004248262	.5746639840	.0131909173	1.0016014946	.0031429135	.5059000341	.0044152226
3.8	.0000014868	.0002919681	.5681488089	.0128987991	1.0011283453	.0022568994	.5043741570	.0031760762
3.9	.0000014868	.0001986651	.5617755979	.0126147927	1.0007879817	.0016024009	.5032113527	.0022580052
4.0	.0000014868	.0001338345	.5555408503	.0123389779	1.0005455998	.0011241354	.5023356916	.0015856349
4.1	.0000014868	.0000892635	.5494409037	.0120713269	1.0003747694	.0007784834	.5016841376	.0010988865
4.2	.0000014867	.0000589439	.5434720155	.0118117320	1.0002556298	.0005314497	.5012051636	.0007505833
4.3	.0000014867	.0000385355	.5376304249	.0115600285	1.0001734221	.0003568770	.5008573076	.0005042246
4.4	.0000014867	.0000249426	.5319123983	.0113160120	1.0001173056	.0002349024	.5006077297	.0003319810
4.5	.0000014867	.0000159838	.5263142635	.0110794531	1.0000794126	.0001506427	.5004308264	.0002129408
4.6	.0000014867	.0000101409	.5208324319	.0108501076	1.0000541020	.0000930959	.5003069463	.0001316136
4.7	.0000014867	.0000063698	.5154634141	.0106277248	1.0000373791	.0000542385	.5002212380	.0000766865
4.8	.0000014867	.0000039613	.5102038291	.0104120528	1.0000264502	.0000282975	.5001626480	.0000400117
4.9	.0000014867	.0000024390	.5050504089	.0102028427	1.0000193851	.0000111748	.5001230720	.0000158016
5.0	.0000014867	.0000014867	.5000000000	.0099998513	1.0000148674	.0000000000	.5000966556	.0000000001

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

$\xi_1 = -4.9$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-4.4	.4943811994	5.0558783668	.6770056652	.0645621148	307641.4093215306	33354.4015918718	3617.0039739519	.9998993000
-4.3	.3025734776	4.7806134255	.7032667535	.0588497622	157389.4400541583	17313.4169121764	1905.1108418534	.9998500385
-4.2	.1895580216	4.5811033768	.7263637782	.0533250405	90826.8402800109	10145.5288820517	1133.7523816140	.9997892953
-4.1	.1208703354	4.4236408726	.7465368285	.0481697475	57248.1002654628	6498.7597377688	738.1523865734	.9997166546
-4.0	.0781917212	4.2905223944	.7640770297	.0434820286	38581.3061127192	4454.6071820493	514.7088336262	.9996319743
-3.9	.0512202052	4.1719302096	.7792899956	.0392978715	27388.6974189049	3218.9708161348	378.6747857744	.9995353451
-3.8	.0339362656	4.0622172545	.7924718283	.0356116860	20257.2906300303	2425.4028154846	290.7262306986	.9994270257
-3.7	.0227259434	3.9580515545	.8038953241	.0323930303	15480.6361661990	1889.6599491542	230.9831793361	.9993073441
-3.6	.0153752119	3.8574306123	.8138035382	.0295987966	12144.2933472338	1512.4658239743	188.6750135543	.9991765906
-3.5	.0105059739	3.7591345548	.8224081565	.0271813429	9729.4264061698	1237.1869923010	157.6239184221	.9990349154
-3.4	.0072491013	3.6624130382	.8298907088	.0250934792	7927.2315269518	1029.9381008539	134.1133842323	.9988822418
-3.3	.0050501837	3.5668017785	.8364052532	.0232912289	6546.3011014938	869.6105449550	115.8157672807	.9987182005
-3.2	.0035519255	3.4720131147	.8420816534	.0217351249	5463.7922962522	742.5953006634	101.2225946713	.9985420839
-3.1	.0025218697	3.3778698027	.8470289261	.0203906043	4596.4474427628	639.8555919964	89.3273840548	.9983528183
-3.0	.0018074157	3.2842644946	.8513383795	.0192278870	3695.0642188552	555.2348695716	79.4416281924	.9981489474
-2.9	.0013075195	3.1911346955	.8550864120	.0182215897	3315.2316965781	484.4430012931	71.0841100228	.9979286195
-2.8	.0009547138	3.0984471566	.8583369320	.0173502285	2831.6281072070	424.4291943113	63.9121482917	.9976895744
-2.7	.0007035813	3.0061880826	.8611434085	.0165956998	2424.4129949001	372.9830445488	57.6776404997	.9974291243
-2.6	.0005233025	2.9143569570	.8635505850	.0159427864	2078.8894117853	328.4744089571	52.1982356209	.9971441243
-2.5	.0003927988	2.8229626381	.8655959003	.0153787124	1783.9575004669	289.6801326544	47.3380001838	.9968309306
-2.4	.0002975410	2.7320208950	.8673106584	.0148927543	1531.0732086639	255.6664845075	42.9941939866	.9964853436
-2.3	.0002274380	2.6415528629	.8687209904	.0144759080	1313.5365160923	225.7081608575	39.0880751707	.9961025326
-2.2	.0001754273	2.5515840937	.8698486421	.0141206076	1125.9984486637	199.2317502443	35.5584161777	.9956769421
-2.1	.0001365298	2.4621439942	.8707116199	.0138204894	964.1156927932	175.7758506405	32.3568795511	.9952021744
-2.0	.0001072087	2.3732655206	.8713247200	.0135701956	824.3060430783	154.9626616756	29.4446897813	.9946708472
-1.9	.0000849336	2.2849850442	.8716999631	.0133652104	703.5734554884	136.4777220408	26.7902204526	.9940744198
-1.8	.0000678812	2.1973423332	.8718469510	.0132017237	599.3815634785	120.0550069035	24.3672350632	.9934029847
-1.7	.0000547282	2.1103806135	.8717731608	.0130765169	509.5611699305	105.4664361883	22.1535986171	.9926450165
-1.6	.0000445075	2.0241466847	.8714841887	.0129868673	432.2417040289	92.5139509129	20.1303305525	.9917870696
-1.5	.0000365077	1.9386910721	.8709839516	.0129304671	365.7996770571	81.0237611070	18.2809063623	.9908134155
-1.4	.0000302015	1.8540682031	.8702748567	.0129053539	308.8102663846	70.8420493349	16.5907410396	.9897056061
-1.3	.0000251959	1.7703365959	.8693579444	.0129098504	260.0616103225	61.8317373629	15.0468057865	.9884419486
-1.2	.0000211956	1.6875590523	.8682330117	.0129425118	218.4404297638	53.8700206932	13.6373425365	.9869968726
-1.1	.0000179777	1.6058028440	.8668987194	.0130020776	183.0021428271	46.8464590754	12.3516503370	.9853401695
-1.0	.0000153728	1.5251398825	.8653526898	.0130874284	152.9096958702	40.6614708138	11.1799245367	.9834360758
-0.9	.0000132509	1.4456468620	.8635915972	.0131975443	127.4285655024	35.2251215290	10.1131347778	.9812421728
-0.8	.0000115124	1.3674053620	.8616112562	.0133314657	105.9150313667	30.4561288328	9.1429314881	.9787080684
-0.7	.0000100799	1.2905018952	.8594067106	.0134882545	87.8056727407	26.2810265750	8.2615732926	.9757738236
-0.6	.0000088931	1.2150278832	.8569723279	.0136669555	72.6093232564	22.6334482083	7.4618697649	.9723680870
-0.5	.0000079049	1.1410795426	.8543019005	.0138665576	59.8970429396	19.4535003676	6.7371354148	.9684059031
-0.4	.0000070781	1.0687576580	.8513887600	.0140859545	49.2969467774	16.6872059564	6.0811518941	.9637861688
-0.3	.0000063832	.9981672207	.8482259049	.0143239051	40.4867695527	14.2860017766	5.4881362089	.9583887393
-0.2	.0000057968	.9294169066	.8448061469	.0145789935	33.1882768965	12.2062815816	4.9527133165	.9520712195
-0.1	.0000053001	.8626183698	.8411222772	.0148495902	27.1620516738	10.4089728606	4.4679919235	.9446655542
0.0	.0000048779	.7978853255	.8371672556	.0151338146	22.2027988995	8.8591490247	4.0350426276	.9359746383
0.1	.0000045180	.7353324012	.8329344234	.0154295010	18.1351233314	7.5256661899	3.6438777814	.9257693389
0.2	.0000042105	.6750737382	.8284177397	.0157341697	14.8097378596	6.3808260255	3.2924326378	.9137865656
0.3	.0000039471	.6172213323	.8236120413	.0160450059	12.1000690405	5.4090612681	2.9770474643	.8997293446
0.4	.0000037212	.5618831146	.8185133220	.0163588490	9.8992266973	4.5616427487	2.6943504135	.8832702366
0.5	.0000035273	.5091607867	.8131190269	.0166721951	8.1173383603	3.8464063834	2.4412410045	.8640598313
0.6	.0000033606	.4591474398	.8074283492	.0169812160	6.6790109729	3.2374578925	2.2148741257	.8417423137
0.7	.0000032175	.4119250108	.8014425369	.0172817973	5.5215233159	2.7201477551	2.0126445060	.8159779865
0.8	.0000030946	.3675616484	.7951651660	.0175695976	4.5926750561	2.2814340823	1.8321716255	.7864877580
0.9	.0000029891	.3261090853	.7886023971	.0178401305	3.8493181577	1.9161025779	1.6712450604	.7530772379
1.0	.0000028989	.2876001347	.7817631804	.0180988679	3.2559187107	1.5963728958	1.5280102633	.7157756292
1.1	.0000028218	.2520464464	.7746593959	.0183113637	2.7833178703	1.3317726830	1.4005547925	.6745235021
1.2	.0000027561	.2194366648	.7673059166	.0185033931	2.4077819860	1.1089845673	1.2872950029	.6299090970
1.3	.0000027004	.1897351361	.7597205749	.0186611003	2.1099032358	.9217073226	1.1867632173	.5824782726
1.4	.0000026532	.1628912927	.7519240255	.0187811473	1.8740333617	.7645304233	1.0976353997	.5330611876
1.5	.0000026136	.1387898217	.7439394987	.0188608538	1.6875344134	.6328211758	1.0187192634	.4826445559
1.6	.0000025804	.1173516798	.7357924462	.0188983161	1.5402517139	.5226236075	.9489431535	.4322878951
1.7	.0000025527	.0984359691	.7275100884	.0188924979	1.4240555710	.4305682829	.8873449782	.3830295838
1.8	.0000025299	.0818926257	.7191208812	.0188432811	1.3324595386	.3537922273	.8330622148	.3358014329
1.9	.0000025111	.0675558178	.7106359255	.0187514748	1.2603042819	.2898681637	.7853221037	.2913660012
2.0	.0000024957	.0552478898	.7021383487	.0186187763	1.2034972919	.2367421355	.7434325170	.2502835035
2.1	.0000024833	.0447836514	.6936026903	.0184476900	1.1587998326	.1926791699	.7067734112	.2129072514
2.2	.0000024734	.0359747836	.6850743225	.0182414075	1.1236535656	.1562155536	.6747888515	.1794006948
2.3	.0000024654	.0286341270	.6765789359	.0180036585	1.0960402783	.1261177780	.6469794059	.1497675251
2.4	.0000024591	.0225796385	.6681401124	.0177385455	1.0743690476	.1013467341	.6223958393	.1238868753
2.5	.0000024542	.0176378340	.6597790027	.0174503722	1.0573859836	.0810277366	.6021325441	.1015478852
2.6	.0000024504	.0136465851	.6515141154	.0171434793	1.0441024295	.0644240414	.5843223431	.0824802374
2.7	.0000024474	.0104571946	.6433612175	.0168220963	1.0337381436	.0509150772	.5691317208	.0663796166
2.8	.0000024452	.0079357322	.6353333393	.0164902181	1.0256765542	.0399778534	.5562568162	.0529269155
2.9	.0000024435	.0059636624	.6274408694	.0161515100	1.0194296738	.0311714382	.5454201261	.0418034982
3.0	.0000024423	.0044378412	.6196917217	.0158092427	1.0146106839	.0241240338	.5363678664	.0327015669
3.1	.0000024413	.0032699847	.6120915571	.0154662564	1.0109125635	.0185222595	.5289680955	.0253316503
3.2	.0000024406	.0023857287	.6046440385	.0151249509	1.0080914436	.0141022806	.5227090314	.0194271631
3.3	.0000024401	.0017234029	.5973511021	.0147872970	1.0059536287	.0106424583	.5176982574	.0147473717
3.4	.0000024398	.0012326351	.5902132295	.0144548639	1.0043454463	.0079572284	.5136618837	.0110785163
3.5	.0000024395	.0008728862	.5832297087	.0141288575	1.0031452632	.0058919583	.5104440145	.0082338641
3.6	.0000024394	.0006119996	.5763988753	.0138101658	1.0022571619	.0043185715	.5079062294	.0060528340
3.7	.0000024392	.0004248263	.5697183271	.0134994052	1.0016058870	.0031317727	.5059270038	.0043994448
3.8	.0000024391	.0002919682	.5631851116	.0131969677	1.0011327727	.0022457465	.5044009813	.0031602900
3.9	.0000024391	.0001986651	.5567958834	.0129030632	1.0007924350	.0015912400	.5032380668	.0022422134
4.0	.0000024390	.0001338345	.5505470342	.0126177590	1.0005500721	.0011129692	.5023623224	.0015698394
4.1	.0000024390	.0000892635	.5444347973	.0123410131	1.0003792556	.0007673138	.5017107063	.0010830886
4.2	.0000024390	.0000589439	.5384553291	.0120727023	1.0002601260	.0005202779	.5012316865	.0007347839
4.3	.0000024390	.0000385355	.5326047721	.0118126459	1.0001779253	.0003457039	.5008837972	.0004884242
4.4	.0000024390	.0000249426	.5268793007	.0115606232	1.0001218138	.0002237284	.5006341954	.0003161802
4.5	.0000024390	.0000159838	.5212751548	.0113163889	1.0000839242	.0001394683	.5004572751	.0001971396
4.6	.0000024390	.0000101409	.5157886630	.0110796831	1.0000586159	.0000819213	.5003333851	.0001158122
4.7	.0000024390	.0000063698	.5104162572	.0108502399	1.0000418946	.0000430637	.5002476665	.0000608850
4.8	.0000024390	.0000039613	.5051544822	.0106277929	1.0000309667	.0000171227	.50018907[illegible]	.0000242102
4.9	.0000024390	.0000024390	.5000000000	.0104120793	1.0000239024	.0000000000	.5001494911	.0000000001

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

$\xi_1 = -4.8$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-4.3	.5113612022	4.9744803615	.6737616815	.0651966161	741872.0265732540	32339.6010587396	3584.0455020823	.9998948921
-4.2	.3155804871	4.6957529863	.6997125014	.0596252276	149738.9760559891	16725.1327024750	1881.2662292475	.9998433302
-4.1	.1994192229	4.4935991693	.7226000765	.0542100244	55464.1323305932	9760.7912378002	1115.2625505047	.9997797285
-4.0	.1282890785	4.3341731941	.7426448555	.0491312590	53627.0360596092	6225.2793269390	723.1562103906	.9997034122
-3.9	.0837430557	4.1996364874	.7601184092	.0444899905	35565.9032940789	4247.9399264562	502.1124010042	.9996141527
-3.8	.0553604196	4.0800515062	.7753089145	.0403273714	25407.8295374926	3055.4901501114	367.8055516456	.9995119003
-3.7	.0370192708	3.9696714347	.7884980328	.0366436084	15699.7439407635	2251.5199164790	281.1484725187	.9993967716
-3.6	.0250215869	3.8650849095	.7999472312	.0334137054	14220.0021622554	1777.0570256811	222.4042913240	.9992689586
-3.5	.0170866613	3.7642287027	.8098910456	.0305991753	11100.8805401680	1415.8304699513	180.6930562819	.9991286251
-3.4	.0117848129	3.6658358447	.8185349772	.0281560340	8850.7897387142	1152.9462356232	150.4964128698	.9989758044
-3.3	.0082077210	3.5691234133	.8260562052	.0260398380	7177.4982109567	955.6284428605	127.5378261197	.9988103080
-3.2	.0057715891	3.4736022802	.8326058181	.0242085808	5900.1273222139	803.4765819377	109.7172044168	.9986316520
-3.1	.0040972886	3.3789673716	.8383117159	.0226241486	4902.7189369316	683.3524761909	95.5453341415	.9984390031
-3.0	.0029362429	3.2850292498	.8432816628	.0212528635	4108.6435668481	586.5373991004	84.0202956939	.9982311405
-2.9	.0021239982	3.1916722118	.8476062034	.0200654892	3465.8853335158	507.0956567285	74.4901601975	.9980064278
-2.8	.0015508130	3.0988282168	.8513612971	.0190369454	2938.2744739975	440.8920837742	66.4534651262	.9977627515
-2.7	.0011428427	3.0064605377	.8546106214	.0181458864	2500.0980859665	384.9863030818	59.5812631467	.9974976570
-2.6	.0008499922	2.9145534061	.8574075391	.0173742374	2132.6952479095	337.2477117858	53.6287422855	.9972081199
-2.5	.0006380062	2.8231054691	.8597967553	.0167067417	1822.2526754001	296.1047650906	48.4158182751	.9968905060
-2.4	.0004832772	2.7321256013	.8618156983	.0161305427	1558.3481097874	260.3781423786	43.8081055355	.9965407186
-2.3	.0003694099	2.6416302485	.8634956646	.0156348139	1332.9699101506	229.1676601900	39.7039190498	.9961539681
-2.2	.0002849311	2.5516417494	.8648627622	.0152104386	1139.8465909172	201.7743819100	36.0252426147	.9957247219
-2.1	.0002217522	2.4621872928	.8659386887	.0148497368	973.9845037172	177.6462493010	32.7113529347	.9952465920
-2.0	.0001741281	2.3732982930	.8667413697	.0145462333	831.3382265240	156.3397021640	29.7143288088	.9947121954
-1.9	.0001379486	2.2850100415	.8672854852	.0142944643	708.5836730563	137.4923246790	26.9956803091	.9941129840
-1.8	.0001102519	2.1973615453	.8675829022	.0140898140	602.9506107308	120.8031890063	24.5240742025	.9934390379
-1.7	.0000888888	2.1103954899	.8676430319	.0139283783	512.1031559018	106.0186309772	22.2735490719	.9926788164
-1.6	.0000722885	2.0241582886	.8674731250	.0138068497	434.0518726573	92.9213676627	20.2222513370	.9918188572
-1.5	.0000592952	1.9387001885	.8670785172	.0137224199	367.0834337640	81.3253386250	18.3514957682	.9908434148
-1.4	.0000490528	1.8540754155	.8664628345	.0136726968	309.7367320855	71.0653125807	16.6450701129	.9897340240
-1.3	.0000409226	1.7703423412	.8656281661	.0136556328	260.7146096465	61.9971759179	15.0887186238	.9884659756
-1.2	.0000344255	1.6875636595	.8645752128	.0136694625	218.9050892230	53.9927517120	13.6697570850	.9870226640
-1.1	.0000291991	1.6058065624	.8633034153	.0137126459	183.3327409450	46.9376166171	12.3767846901	.9853649263
-1.0	.0000249681	1.5251429024	.8618110699	.0137838187	153.1448407361	40.7292616543	11.1294673522	.9834599258
-0.9	.0000215219	1.4456493294	.8600954340	.0138817445	127.5957645079	35.2755999183	10.1283737311	.9812652519
-0.8	.0000186982	1.3674073897	.8581528271	.0140052704	106.0338710934	30.4937652207	9.1543501830	.9787305014
-0.7	.0000163715	1.2905035706	.8559787319	.0141532841	87.8902988848	26.3091252471	8.2702244423	.9757957249
-0.6	.0000144440	1.2150292749	.8535678974	.0143246709	72.6692646567	22.6544541271	7.4692305084	.9723895614
-0.5	.0000128390	1.1410807044	.8509144499	.0145182721	59.9395682748	19.4692247236	6.7429491748	.9684270456
-0.4	.0000114961	1.0687586324	.8480120145	.0147328425	49.3270880817	16.6989920718	6.0857600877	.9638070648
-0.3	.0000103675	.9981680413	.8448538503	.0149670077	40.5081087387	14.2948474236	5.4918023015	.9584094634
-0.2	.0000094151	.9294176006	.8414330032	.0152192227	33.2033633007	12.2129281441	4.9556410933	.9520918344
-0.1	.0000086083	.8626189587	.8377424786	.0154877302	27.1726993247	10.4139728668	4.4722393892	.9446861082
0.0	.0000079226	.7978858268	.8337754366	.0157705218	22.2102984269	8.8629143042	4.0369325958	.9359951622
0.1	.0000073381	.7353328291	.8295254100	.0160653026	18.1403924279	7.5285042467	3.6454059619	.9257898415
0.2	.0000068386	.6750741043	.8249865468	.0163694616	14.8134288490	6.3829667956	3.2935738110	.9138070283
0.3	.0000064108	.6172216461	.8201538754	.0166800495	12.1026452976	5.4016769535	2.9780602197	.8997497142
0.4	.0000060439	.5618833839	.8150235885	.0169937681	9.9010171151	4.5628624310	2.6951807824	.8832904173
0.5	.0000057289	.5091610180	.8095933417	.0173069734	8.1185461659	3.8473270534	2.4419252549	.8640796772
0.6	.0000054582	.4591476385	.8038625592	.0176156953	6.6798612805	3.2381944816	2.2154409168	.8417616201
0.7	.0000052257	.4119251815	.7978327353	.0179156773	5.5221029272	2.7206711921	2.0131165516	.8159924799
0.8	.0000050261	.3675617949	.7915077199	.0182024382	4.5930663944	2.2818277977	1.8325669826	.7865051596
0.9	.0000048549	.3261092108	.7848939726	.0184713560	3.8495792644	1.9103978635	1.6716181284	.7530930755
1.0	.0000047083	.2876002421	.7780007700	.0187177755	3.2560903448	1.5965934185	1.5282925616	.7157195196
1.1	.0000045831	.2520465380	.7708403466	.0189371348	2.7834485583	1.3319363565	1.4007955662	.6745350137
1.2	.0000044764	.2194367427	.7634279556	.0191251084	2.4078516108	1.1091050030	1.2875016969	.6299178277
1.3	.0000043859	.1897352021	.7557818334	.0192777587	2.1099455857	.9217948297	1.1869418471	.5824838913
1.4	.0000043093	.1628813484	.7479230582	.0193916883	1.8740579385	.7645928454	1.0977908337	.5330634712
1.5	.0000042449	.1387898684	.7398752978	.0194641817	1.6875477136	.6328644816	1.0188555087	.4826434236
1.6	.0000041910	.1173517189	.7316644488	.0194933274	1.5402581345	.5226523431	.9490634029	.4322833743
1.7	.0000041461	.0984360014	.7233181761	.0194781081	1.4240580492	.4305859142	.8874519097	.3830218574
1.8	.0000041089	.0818926524	.7148653722	.0194184520	1.3324600025	.3538013983	.8331580148	.3357907791
1.9	.0000040784	.0675558397	.7063355580	.0193152392	1.2603039667	.2898708728	.7854085769	.2913527401
2.0	.0000040535	.0552479075	.6977582568	.0191702605	1.2034969611	.2367399640	.7435111686	.2502680041
2.1	.0000040334	.0447836657	.6891623721	.0189861316	1.1587999330	.1926732752	.7068454872	.2128898737
2.2	.0000040172	.0359747951	.6805756032	.0187661688	1.1236543338	.1562068346	.6748553502	.1793817757
2.3	.0000040042	.0286341361	.6720239251	.0185142349	1.0960418149	.1261068712	.6470412962	.1497473650
2.4	.0000039940	.0225796457	.6635311595	.0182345683	1.0743713676	.1013342630	.6229538143	.1238657326
2.5	.0000039861	.0176378396	.6551186502	.0179316066	1.0573890505	.0810140502	.6021872285	.1015259753
2.6	.0000039799	.0136465894	.6468050528	.0176098182	1.0441061786	.0644094432	.5843742669	.0824577862
2.7	.0000039751	.0104571979	.6386062370	.0172735505	1.0337424968	.0508997978	.5691813345	.0663566645
2.8	.0000039714	.0079357347	.6305352943	.0169269039	1.0256814297	.0399620675	.5563045033	.0529036231
2.9	.0000039687	.0059636642	.6226026369	.0165736348	1.0194349922	.0311552776	.5454662132	.0417799514
3.0	.0000039667	.0044378426	.6148161698	.0162170903	1.0146163715	.0241075978	.5364126546	.0326778517
3.1	.0000039651	.0032699857	.6071815164	.0158601722	1.0109185544	.0185056223	.5289117751	.0253077767
3.2	.0000039640	.0023857294	.5997022793	.0155053276	1.0080976802	.0140854977	.5227518254	.0194031889
3.3	.0000039632	.0017234034	.5923803160	.0151545616	1.0059600618	.0106255708	.5177403347	.0147233250
3.4	.0000039626	.0012326355	.5852160155	.0148094662	1.0043520345	.0079402664	.5137033859	.0110544180
3.5	.0000039622	.0008728864	.5782085633	.0144712603	1.0031519724	.0058749439	.5104850508	.0082097294
3.6	.0000039619	.0006119998	.5713561860	.0141408364	1.0022639643	.0043015206	.5079469133	.0060286739
3.7	.0000039617	.0004248264	.5646563689	.0138188090	1.0016127604	.0031146968	.5059674068	.0043752673
3.8	.0000039616	.0002919683	.5581060457	.0135055628	1.0011396995	.0022286538	.5044411680	.0031361008
3.9	.0000039615	.0001986652	.5517017582	.0132012968	1.0007994015	.0015741360	.5032780878	.0022180163
4.0	.0000039614	.0001338346	.5454397871	.0129060644	1.0005570678	.0010958579	.5024022187	.0015456372
4.1	.0000039614	.0000892636	.5393162582	.0126198081	1.0003862725	.0007501978	.5017505097	.0010588832
4.2	.0000039614	.0000589439	.5333272242	.0123423879	1.0002671581	.0005031590	.5012714216	.0007105765
4.3	.0000039613	.0000385356	.5274687281	.0120736056	1.0001849682	.0003285833	.5009234825	.0004642155
4.4	.0000039613	.0000249426	.5217368499	.0118132235	1.0001288642	.0002066068	.5006738449	.0002919707
4.5	.0000039613	.0000159838	.5161277395	.0115609788	1.0000909798	.0001223461	.5004968993	.0001729298
4.6	.0000039613	.0000101409	.5106376405	.0113165950	1.0000656751	.0000647988	.5003729894	.0000916022
4.7	.0000039613	.0000063698	.5052629044	.0110797900	1.0000489563	.0000259411	.5002872605	.0000366749
4.8	.0000039613	.0000039613	.5000000000	.0108502818	1.0000380300	.0000000000	.5002286564	.0000000001

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

$\xi_1 = -4.7$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-4.2	.5288381970	4.8935951622	.6704860696	.0658271605	276703.2143458719	31347.6618938973	3552.1515559784	.9998901919
-4.1	.3290759973	4.6114089527	.6961117411	.0603999390	140454.4886662050	16152.2160702234	1858.1074933724	.9998362690
-4.0	.2097377041	4.4065957074	.7187742811	.0550990217	80359.5523951004	9388.5387996441	1097.3842468270	.9997695150
-3.9	.1361203578	4.2451799035	.7386755678	.0501024871	50190.6075447556	5962.2141582669	708.7003124944	.9996892753
-3.8	.0896561991	4.1091946752	.7560683599	.0455136659	33505.3047350525	4050.2688757036	490.0110519720	.9995951282
-3.7	.0598111682	3.9885873634	.7712238048	.0413783622	23554.8102726886	2899.9680981791	357.3984336840	.9994868687
-3.6	.0403644552	3.8775142748	.7844092549	.0377022411	17250.7547966917	2164.8046845482	272.0079142011	.9993644534
-3.5	.0275358699	3.7724861258	.7958747867	.0344655781	13053.4665722338	1671.0173868124	214.2431561329	.9992279174
-3.4	.0189787994	3.6713786876	.8058462398	.0316344599	10140.2923346168	1325.2266837101	173.5128758932	.9990772739
-3.3	.0132120242	3.5728802451	.8145226994	.0291685982	8045.8141778789	1074.3019966430	143.7566517841	.9989124115
-3.2	.0092876645	3.4761725424	.8220767481	.0270263804	6493.7867000331	886.5334660945	121.3370551115	.9987329995
-3.1	.0065919583	3.3807419258	.8286562703	.0251678761	5313.4276607760	742.2138161923	103.9809421089	.9985384079
-3.0	.0047232970	3.2862654116	.8343869914	.0235564322	4395.3876971819	628.6634493451	90.2179677536	.9983276439
-2.9	.0034163489	3.1925409148	.8393752412	.0221593569	3667.4810440645	537.4766210287	79.0685498997	.9980993030
-2.8	.0024942249	3.0994439965	.8437106465	.0209480458	3080.7523457385	462.9335613333	69.8632348957	.9978515300
-2.7	.0018379764	3.0069007745	.8474686010	.0198977954	2601.1867505631	401.0514027174	62.1342914429	.9975819855
-2.6	.0013669484	2.9148708120	.8507124459	.0189874582	2204.6206898883	348.9986726061	55.5485401456	.9972878104
-2.5	.0010260070	2.8233362332	.8534953517	.0181990366	1873.5302734658	304.7238090627	49.8645297633	.9969655852
-2.4	.0007771648	2.7322947640	.8558619134	.0175172711	1594.9548816883	266.7135469120	44.9045297556	.9966112779
-2.3	.0005940444	2.6417552691	.8578494897	.0169292527	1359.1261408768	233.8323393718	40.5357970604	.9962201765
-2.2	.0004581900	2.5517348936	.8594893186	.0164240727	1158.5457992399	205.2135956902	36.6577935082	.9957868030
-2.1	.0003565909	2.4622572419	.8608074419	.0159925171	987.3555417530	180.1848126947	33.1933126101	.9953048047
-2.0	.0002800067	2.3733512363	.8618254705	.0156268011	840.9002289807	158.2153182999	30.0822285640	.9947668187
-1.9	.0002218272	2.2850504241	.8625612154	.0153203445	715.4213723781	138.8793646094	27.2770374213	.9941643054
-1.8	.0001772892	2.1973925819	.8630292094	.0150675797	607.8395167433	121.8297982904	24.7396437058	.9934873447
-1.7	.0001429363	2.1104195223	.8632411379	.0148637909	515.5980167875	106.7791110466	22.4390248656	.9927243897
-1.6	.0001162419	2.0241770341	.8632061961	.0147049768	436.5496232325	93.4856931690	20.3495219717	.9918619677
-1.5	.0000953482	1.9387149155	.8629313852	.0145877354	368.8731664914	81.7437860811	18.4495816040	.9908843199
-1.4	.0000788780	1.8540870668	.8624217610	.0145091646	311.0115550180	71.3760822246	16.7208253903	.9897729669
-1.3	.0000658045	1.7703516224	.8616806418	.0144667778	261.6249714474	62.2282298075	15.1473589857	.9885061846
-1.2	.0000553569	1.6875711020	.8607097871	.0144584290	219.5549793936	54.1647140947	13.7152568615	.9870583727
-1.1	.0000469527	1.6058125692	.8595095510	.0144822479	183.7965217719	47.0657371030	12.4121766451	.9853992936
-1.0	.0000401492	1.5251477808	.8580790185	.0145365808	153.4756764717	40.8248238788	11.2270691712	.9834931570
-0.9	.0000346076	1.4456533153	.8564161295	.0146199363	127.8316560459	35.3469593494	10.1499593696	.9812975193
-0.8	.0000300670	1.3674106652	.8545177953	.0147309347	106.2019753058	30.5471141239	9.1717796434	.9787619650
-0.7	.0000263257	1.2905062773	.8523800121	.0148682599	88.0100193371	26.3490567965	8.2842421684	.9758265329
-0.6	.0000232262	1.2150315232	.8499979763	.0150306121	72.7544625507	22.6843785918	7.4797400643	.9724198503
-0.5	.0000206453	1.1410825812	.8473662057	.0152166619	60.0001436271	19.4916766717	6.7512699840	.9684569402
-0.4	.0000184859	1.0687602064	.8444786697	.0154250045	49.3701102529	16.7158572547	6.0923705914	.9638366775
-0.3	.0000166711	.9981693671	.8413289327	.0156541142	40.5386245927	14.3075304445	5.4970728254	.9584388923
-0.2	.0000151396	.9294187216	.8379103151	.0159022998	33.2249748239	12.2224764514	4.9598589091	.9521211614
-0.1	.0000138423	.8626199100	.8342160722	.0161676609	27.1879764182	10.4211685203	4.4756278509	.9447153953
0.0	.0000127397	.7978866366	.8302395964	.0164480474	22.2210738765	8.8683419476	4.0396657740	.9360244462
0.1	.0000117998	.7353335204	.8259746415	.0167410224	18.1479726653	7.5326015022	3.6476198472	.9258191278
0.2	.0000109965	.6750746958	.8214155716	.0170438309	14.8187445327	6.3860616638	3.2954749177	.9138362823
0.3	.0000103087	.6172221530	.8165576311	.0173533777	12.1063588898	5.4040155977	2.9795321896	.8997788507
0.4	.0000097187	.5618838190	.8113972352	.0176662165	9.9035997291	4.5646298428	2.6963894723	.8833192890
0.5	.0000092121	.5091613917	.8059322732	.0179785527	8.1203324549	3.8486624399	2.4429226608	.8641080627
0.6	.0000087769	.4591479596	.8001624184	.0182862650	6.6810886362	3.2392027364	2.2162682067	.8417892120
0.7	.0000084031	.4119254573	.7940894344	.0185849460	5.5229394670	2.7214314589	2.0138064143	.8160248781
0.8	.0000080821	.3675620316	.7877174637	.0188699664	4.5936309375	2.2823998693	1.8331454507	.7865298711
0.9	.0000078067	.3261094137	.7810532845	.0191365618	3.8499555849	1.9108269723	1.6721059963	.7531155263
1.0	.0000075713	.2876004156	.7741065185	.0193799433	3.2563373355	1.5969138250	1.5287064911	.7157390814
1.1	.0000073696	.2520466860	.7668897731	.0195954278	2.7836074739	1.3321740526	1.4011489499	.6745510471
1.2	.0000071981	.2194368685	.7594186999	.0197785851	2.4079512265	1.1092796966	1.2878053347	.6299297380
1.3	.0000070525	.1897353087	.7517119573	.0199253928	2.1100058659	.9219215259	1.1872044772	.5824911900
1.4	.0000069294	.1628814383	.7437910641	.0200323922	1.8740926448	.7646829546	1.0980195504	.5330658303
1.5	.0000068258	.1387899439	.7356801422	.0200968327	1.6875662536	.6329266951	1.0190560919	.4826407116
1.6	.0000067391	.1173517619	.7274055488	.0201167956	1.5402568728	.5226932867	.9492405786	.4322756645
1.7	.0000066669	.0984360537	.7189954083	.0200912849	1.4240612331	.4306106432	.8876095566	.3830094092
1.8	.0000066072	.0818926955	.7104790633	.0200202784	1.3324604148	.3538137720	.8332093284	.3357739965
1.9	.0000065582	.0675558750	.7018864671	.0199047315	1.2603333848	.2898738389	.7855362002	.2913321199
2.0	.0000065181	.0552479362	.6932475495	.0197465333	1.2034964787	.2367357746	.7436272960	.2502440836
2.1	.0000064857	.0447836889	.6845915878	.0195484164	1.1588301841	.1926636509	.7069519481	.2128631871
2.2	.0000064596	.0359748136	.6759466154	.0193138275	1.1236556484	.1561930900	.6749536758	.1793528217
2.3	.0000064389	.0286341508	.6673388983	.0190467683	1.0960443263	.1260900096	.6471327731	.1497165681
2.4	.0000064225	.0225796572	.6587925021	.0187516185	1.0743750860	.1013150499	.6230395273	.1238335144
2.5	.0000064096	.0176378486	.6503289668	.0184329550	1.0573939128	.0809930689	.6022680958	.1014926340
2.6	.0000063997	.0136465963	.6419670963	.0180953784	1.0441120813	.0643871372	.5844510675	.0824235807
2.7	.0000063920	.0104572033	.6337228633	.0177433581	1.0337493184	.0508765037	.5692547309	.0663218017
2.8	.0000063862	.0079357388	.6256094197	.0173811030	1.0256890443	.0399380400	.5563750598	.0528682655
2.9	.0000063817	.0059636673	.6176371993	.0170124633	1.0194432783	.0311307088	.5455344107	.0417442249
3.0	.0000063784	.0044378448	.6098140953	.0166408644	1.0146252171	.0240826321	.5364789026	.0326418528
3.1	.0000063760	.0032699874	.6021456909	.0162692706	1.0109278592	.0184803677	.5289764217	.0252715785
3.2	.0000063742	.0023857306	.5946355245	.0159001769	1.0081073567	.0140600345	.5228151656	.0193668464
3.3	.0000063729	.0017234043	.5872853711	.0155356229	1.0059700355	.0105999583	.5178026172	.0146868790
3.4	.0000063720	.0012326361	.5800955236	.0151772228	1.0043622427	.0079145483	.5137648194	.0110178985
3.5	.0000063713	.0008728869	.5730650591	.0148262076	1.0031623635	.0058491518	.5105458169	.0081731585
3.6	.0000063708	.0006120001	.5661920929	.0144834735	1.0022744964	.0042756774	.5080071394	.0059920674
3.7	.0000063705	.0004248266	.5594739933	.0141496319	1.0016233998	.0030888188	.5060272160	.0043386365
3.8	.0000063703	.0002919684	.5529075767	.0138250588	1.0011504196	.0022027524	.5045006593	.0030994537
3.9	.0000063701	.0001986653	.5464892680	.0135099409	1.0008101816	.0015482193	.5033373350	.0021813585
4.0	.0000063700	.0001338346	.5402152340	.0132043164	1.0005678920	.0010699313	.5024617820	.0015089725
4.1	.0000063700	.0000892636	.5340814894	.0129081105	1.0003971287	.0007242650	.5018054358	.0010222141
4.2	.0000063699	.0000589439	.5280839804	.0126211652	1.0002780372	.0004772224	.5013302467	.0006739048
4.3	.0000063699	.0000385356	.5222186483	.0123432637	1.0001958636	.0003026444	.5009827342	.0004275423
4.4	.0000063699	.0000249426	.5164814756	.0120741494	1.0001397710	.0001806667	.5007325437	.0002552966
4.5	.0000063699	.0000159638	.5108685202	.0118135413	1.0001018945	.0000964054	.5005555605	.0001362552
4.6	.0000063698	.0000101409	.5053759386	.0115611448	1.0000765953	.0000388578	.5004316243	.0000549275
4.7	.0000063698	.0000063698	.5000000000	.0113166605	1.0000598801	.0000000000	.5003458772	.0000000001

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

$\xi_1 = -4.6$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-4.1	.5468225136	4.8132329942	.6671790388	.0664532987	262101.4016298698	30375.6417845498	3521.1240911587	.9998851664
-4.0	.3430740247	4.5275953027	.6924645366	.0611732530	132525.7421128267	15594.5329056103	1835.6645826268	.9998286663
-3.9	.2205305427	4.3201102463	.7148861377	.0559912613	75501.7704434297	9028.2973834755	1080.1007921095	.9997585935
-3.8	.1443833842	4.1566808084	.7346282197	.0510826316	46944.2082863962	5709.1377853868	694.7716642254	.9996741592
-3.7	.0959514918	4.0192185424	.7519254993	.0465523386	31190.8998836198	3861.1790694959	478.3892335153	.9995747856
-3.6	.0645930044	3.8975604612	.7670325432	.0424503150	21821.8058451238	2751.9999866591	347.4363451591	.9994600971
-3.5	.0439918470	3.7857690202	.7802025698	.0387873227	15903.1351472654	2044.8655963077	263.2868023578	.9993298722
-3.4	.0302877625	3.6802786720	.7916742421	.0355487068	11974.3741275531	1571.1315121028	206.4815933231	.9991839663
-3.3	.0210691997	3.5789052773	.8016645557	.0327050542	9256.2954091353	1240.2852123773	166.5158713305	.9990222145
-3.2	.0148036129	3.4802912591	.8103659670	.0302197877	7308.6922881051	1000.8951129907	137.3857986559	.9988443299
-3.1	.0105033134	3.3835839726	.8179462272	.0280541956	5870.6568839515	822.3047120782	115.4921365703	.9986498057
-3.0	.0075240841	3.2882444269	.8245497858	.0261705181	4781.1069661445	685.4842245118	98.5880812926	.9984378289
-2.9	.0054412445	3.1939312758	.8302999816	.0245336663	3937.0329549118	578.2031817128	85.2217605782	.9982072071
-2.8	.0039721038	3.1004293618	.8353015234	.0231120324	3270.5111613168	492.3610815961	74.4266964116	.9979563090
-2.7	.0029267699	3.0076051440	.8396429610	.0218777329	2735.5228980901	422.4498955060	65.5427869047	.9976830132
-2.6	.0021765803	2.9153786051	.8433989876	.0208065166	2300.1224722687	364.6362428022	58.1089910659	.9973846612
-2.5	.0016336312	2.8237053888	.8466324964	.0198774973	1941.6353314486	316.1958759056	51.7969137462	.9970580089
-2.4	.0012373799	2.7325653613	.8493963721	.0190728053	1643.6315204104	275.1553240310	46.3685147657	.9966991715
-2.3	.0009457988	2.6419552480	.8517350221	.0183772183	1393.9713006719	240.0591281970	41.6484895742	.9963035559
-2.2	.0007294876	2.5518838799	.8536856699	.0177778054	1183.5158672247	209.8153079770	37.5058179396	.9958657765
-2.1	.0005677235	2.4623691247	.8552794395	.0172635992	1005.2608214255	183.5907947076	33.8411894779	.9953795490
-2.0	.0004457905	2.3734359173	.8565422589	.0168253042	853.7441656543	160.7394941600	30.5782832498	.9948375591
-1.9	.0003531620	2.2851150137	.8574956105	.0164550428	724.6359585168	140.7520854393	27.6576281793	.9942312988
-1.8	.0002822532	2.1974422228	.8581571537	.0161461357	614.4501751401	123.2205567339	25.0322246572	.9935508668
-1.7	.0002275604	2.1104579601	.8585412415	.0158929149	520.3399395354	107.8128848539	22.6643881392	.9927847248
-1.6	.0001850616	2.0242070159	.8586593486	.0156905634	439.9503247394	94.2547882603	20.5234530455	.9919194011
-1.5	.0001517976	1.9387384699	.8585204283	.0155349792	371.3113115407	82.3164662424	18.5840899387	.9909391326
-1.4	.0001255762	1.8541057019	.8581312107	.0154226588	312.7590096773	71.8028843752	16.8250644174	.9898254318
-1.3	.0001047626	1.7703664667	.8574964533	.0153505967	262.8769263263	62.5466006673	15.2283169055	.9885565641
-1.2	.0000881295	1.6875830056	.8566191541	.0153161985	220.4515593812	54.4024227805	13.7782771594	.9871069172
-1.1	.0000747498	1.6058221764	.8555007352	.0153172038	184.4383020087	47.2433913998	12.4613513850	.9854462412
-1.0	.0000639184	1.5251555832	.8541412042	.0153516182	153.9348282178	40.9577281365	11.2655368177	.9835387330
-0.9	.0000550960	1.4456596902	.8525392988	.0154176506	128.1599547579	35.4464876789	10.1801307237	.9813419361
-0.8	.0000478673	1.3674159040	.8506926219	.0155136555	106.4365541828	30.6217261593	9.1955095021	.9788054224
-0.7	.0000419110	1.2905106062	.8485977705	.0156380789	88.1775024606	26.4050495553	8.3029599230	.9758692180
-0.6	.0000369765	1.2150351191	.8462504644	.0157894058	72.8739333258	22.7264433182	7.4945491802	.9724619370
-0.5	.0000328677	1.1410855830	.8436456792	.0159661095	60.0852761773	19.5233114719	6.7630238663	.9684985885
-0.4	.0000294299	1.0687627239	.8407777872	.0161666019	49.4306993843	16.7396730382	6.1017305089	.9638780317
-0.3	.0000265407	.9981714875	.8376407101	.0163891847	40.5816837405	14.3254778909	5.5045521893	.9584800788
-0.2	.0000241025	.9294205145	.8342280882	.0166320011	33.2555237711	12.2360144933	4.9658571625	.9521622844
-0.1	.0000220372	.8626214315	.8305334679	.0168929905	27.2096063058	10.4313894971	4.4804564410	.9447565315
0.0	.0000202818	.7978879318	.8265505109	.0171698448	22.2363523805	8.8760646427	4.0435680835	.9360656371
0.1	.0000187854	.7353346260	.8222732254	.0174599701	18.1587344934	7.5384403603	3.6507865130	.9258603701
0.2	.0000175066	.6750756417	.8176962219	.0177604538	14.8262996556	6.3904783318	3.2980556219	.9138775148
0.3	.0000164116	.6172229637	.8128149894	.0180680421	12.1116417725	5.4073573384	2.9816447502	.8998199398
0.4	.0000154723	.5618845148	.8076261915	.0183791280	9.9072762532	4.5671581941	2.6981268643	.8833600109
0.5	.0000146658	.5091619894	.8021279758	.0186897557	8.1228765086	3.8505746170	2.4443584479	.8641480853
0.6	.0000139730	.4591484731	.7963202885	.0189956417	6.6828369588	3.2406476336	2.2174607516	.8418280792
0.7	.0000133778	.4119258984	.7902051848	.0192922182	5.5241309086	2.7225216256	2.0148021488	.8160619985
0.8	.0000128668	.3675624101	.7837871216	.0195746988	4.5944345498	2.2832204847	1.8339814200	.7865645187
0.9	.0000124285	.3261097381	.7770732164	.0198381689	3.8504907100	1.9114425775	1.6728118432	.7531468578
1.0	.0000120532	.2876006930	.7700734572	.0200776989	3.2566879628	1.5973733807	1.5293060062	.7157661754
1.1	.0000117326	.2520469226	.7628008439	.0202884789	2.7838324934	1.3325147420	1.4016612861	.6745729674
1.2	.0000114595	.2194370698	.7552714465	.0204659692	2.4080917431	1.1095297885	1.2882459601	.6299456158
1.3	.0000112277	.1897354792	.7475043642	.0206060597	2.1100904130	.9221025351	1.1875859243	.5825003130
1.4	.0000110318	.1628815821	.7395215749	.0207052284	1.8741408940	.7648112707	1.0983520078	.5330677225
1.5	.0000108669	.1387900646	.7313476725	.0207606893	1.6875916521	.6330148145	1.0193478708	.4826351851
1.6	.0000107288	.1173518826	.7230094913	.0207705174	1.5402785126	.5227507450	.9494984830	.4322628320
1.7	.0000106139	.0984361373	.7145356312	.0207337405	1.4240651746	.4306447215	.8878391769	.3829896547
1.8	.0000105188	.0818927645	.7059558991	.0206503890	1.3324606212	.3538300330	.8335052751	.3357479156
1.9	.0000104407	.0675559314	.6973006937	.0205214985	1.2603023791	.2898765339	.7857222901	.2913004428
2.0	.0000103770	.0552479821	.6886003629	.0203490613	1.2034958046	.2367281531	.7437967016	.2502075991
2.1	.0000103253	.0447837259	.6798845671	.0201359328	1.1588007276	.1926481966	.7071073164	.2128226776
2.2	.0000102839	.0359748432	.6711816825	.0198856961	1.1236578614	.1561717003	.6750972241	.1793090173
2.3	.0000102508	.0286341743	.6625182720	.0196024977	1.0960483804	.1260641336	.6472663659	.1496701387
2.4	.0000102247	.0225796757	.6539186499	.0192908646	1.0743809779	.1012857927	.6231647380	.1237849772
2.5	.0000102042	.0176378630	.6454045551	.0189555181	1.0574015357	.0809612721	.6023862566	.1014424729
2.6	.0000101884	.0136466075	.6369949418	.0186011960	1.0441212728	.0643534406	.5845633097	.0823721730
2.7	.0000101762	.0104572118	.6287058855	.0182324935	1.0337598916	.0508413926	.5693620171	.0662694480
2.8	.0000101669	.0079357452	.6205505975	.0178537314	1.0257008077	.0399018812	.5564782104	.0528152016
2.9	.0000101598	.0059636721	.6125395317	.0174688564	1.0194560482	.0310937788	.5456341250	.0416906331
3.0	.0000101546	.0044378484	.6046805666	.0170813736	1.0146388247	.0240451382	.5365757766	.0325878726
3.1	.0000101507	.0032699900	.5969792416	.0166943112	1.0109421539	.0184424648	.5290709620	.0252173153
3.2	.0000101478	.0023857326	.5894390276	.0163102126	1.0081222076	.0140218374	.5229078017	.0193123790
3.3	.0000101458	.0017234057	.5820616127	.0159311513	1.0059853307	.0105615516	.5178937114	.0146322659
3.4	.0000101443	.0012326371	.5748471884	.0155587637	1.0043778885	.0078759940	.5138546756	.0109631827
3.5	.0000101432	.0008728876	.5677947229	.0151942919	1.0031782827	.0058104948	.5106346882	.0081183711
3.6	.0000101425	.0006120006	.5609022124	.0148386344	1.0022906262	.0042369499	.5080952347	.0059372309
3.7	.0000101420	.0004248270	.5541669054	.0144923982	1.0016396899	.0030500437	.5061147083	.0042837668
3.8	.0000101416	.0002919687	.5475854968	.0141559494	1.0011668303	.0021639457	.5045876828	.0030445620
3.9	.0000101414	.0001986654	.5411542913	.0138294605	1.0008266820	.0015093921	.5034240025	.0021264525
4.0	.0000101412	.0001338347	.5348693380	.0135129529	1.0005844582	.0010310911	.5025476809	.0014540574
4.1	.0000101411	.0000892637	.5287265376	.0132063332	1.0004137428	.0006854168	.5018956347	.0009672935
4.2	.0000101410	.0000589440	.5227217269	.0129094239	1.0002946856	.0004383695	.5014162982	.0006189808
4.3	.0000101410	.0000385356	.5168507422	.0126219877	1.0002125363	.0002637889	.5010681783	.0003726165
4.4	.0000101409	.0000249427	.5111094665	.0123437482	1.0001564608	.0001418098	.5008184108	.0002003698
4.5	.0000101409	.0000159838	.5054938634	.0120744044	1.0001185961	.0000575478	.5006413728	.0000813280
4.6	.0000101409	.0000101409	.5000000000	.0118136425	1.0000933049	.0000000000	.5005173982	.0000000001

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-4.5$								
-4.0	.5653245005	4.7334040900	.6638408209	.0670745723	248047.6199128814	29422.9099498684	3490.9257020347	.9998797838
-3.9	.3575887333	4.4443261382	.6887709919	.0619445074	124937.3480616467	15051.3169667690	1813.8970175124	.9998205219
-3.8	.2318151581	4.2341603446	.7109354478	.0568859305	70879.8415532041	8679.5943829802	1063.3983802138	.9997468947
-3.7	.1530979470	4.0686962414	.7305021321	.0520708262	43873.5176483520	5465.6202835851	681.3552286946	.9996579675
-3.6	.1026500994	3.9297304375	.7476885132	.0476052017	29014.4546574402	3680.2617674678	467.2306872036	.9995529941
-3.5	.0697275360	3.8069944717	.7627330643	.0435425902	20201.4249982433	2611.1977867036	337.9026063713	.9994314126
-3.4	.0479227200	3.6944601231	.7758750881	.0398984680	14650.1468367590	1931.3308798474	254.9681140362	.9992928036
-3.3	.0332976245	3.5884874051	.7873418495	.0366630211	10976.5062245179	1477.0492716838	199.1021327698	.9991368175
-3.2	.0233769195	3.4868331210	.7973413834	.0338112364	8443.1196447840	1160.6564866072	159.8842136408	.9989630817
-3.1	.0165771098	3.3880940529	.8060593263	.0313102409	6634.0342612011	932.3864962334	131.3657972301	.9987710994
-3.0	.0118705807	3.2913830167	.8136583760	.0291242751	5303.0732242357	762.6137031969	109.9849154792	.9985601491
-2.9	.0085822632	3.1961353484	.8202793217	.0272178339	4298.4600764071	632.9707051934	93.5204920362	.9983291920
-2.8	.0062638776	3.1019909395	.8260429048	.0255574878	3523.2628863422	531.6659847932	80.5387323990	.9980767897
-2.7	.0046148087	3.0087211667	.8310520233	.0241128089	2913.6422327017	450.8974127898	70.0860146125	.9978010329
-2.6	.0034316145	2.9161830420	.8353939855	.0228567218	2426.3939115251	385.3641589497	61.5114521607	.9974994769
-2.5	.0025754192	2.8242901329	.8391426432	.0217655051	2031.5562863877	331.3794006640	54.3606385591	.9971690802
-2.4	.0019506311	2.7329939534	.8423603227	.0208185986	1707.8835043234	286.3242727761	48.3099601510	.9968061408
-2.3	.0014909216	2.6422719704	.8450995232	.0199983134	1439.9960366068	248.3023005964	43.1248231569	.9964062236
-2.2	.0011499053	2.5521198308	.8474043802	.0192895072	1216.5427093805	215.9152058069	38.6324054207	.9959640747
-2.1	.0008948951	2.4625463084	.8493119111	.0186792603	1028.9894530269	188.1142376663	34.7034769820	.9954735164
-2.0	.0007026829	2.3735700193	.8508530654	.0181565711	870.8058227713	164.0996696956	31.2400254779	.9949273167
-1.9	.0005566695	2.2852172968	.8520536049	.0177120812	736.9094663460	143.2517041798	28.1666828318	.9943170298
-1.8	.0004448959	2.1975208322	.8529348384	.0173378322	623.2810804969	125.0822703200	25.4246936678	.9936327990
-1.7	.0003586849	2.1105188280	.8535142346	.0170270531	526.6939378656	109.2009685517	22.9676153684	.9928631157
-1.6	.0002916960	2.0242544930	.8538059321	.0167739778	444.5215269073	95.2907418331	20.7582178925	.9919945269
-1.5	.0002392639	1.9387757687	.8538211651	.0165736872	374.5991147111	83.0903246426	18.7662271993	.9910112793
-1.4	.0001979331	1.8541352107	.8535686201	.0164219737	315.1229353074	72.3814681728	16.9666694739	.9898948885
-1.3	.0001651263	1.7703899726	.8530547355	.0163152236	264.5758789460	62.9795632357	15.3386479117	.9886236178
-1.2	.0001389090	1.6876018548	.8522839558	.0162503160	221.6720043069	54.7266992475	13.8644337589	.9871718499
-1.1	.0001178198	1.6058373894	.8512589501	.0162245331	185.3145259350	47.4864812349	12.5287873574	.9855093268
-1.0	.0001007473	1.5251679383	.8499808026	.0162354807	154.5635244698	41.1401225182	11.3184485376	.9836002361
-0.9	.0000868414	1.4456697849	.8484491824	.0162810165	128.6107306017	35.5834674961	10.2217522860	.9814021108
-0.8	.0000754477	1.3674241995	.8466624995	.0163591845	106.7595032822	30.7246955694	9.2283374230	.9788645112
-0.7	.0000660594	1.2905174610	.8446180522	.0164681534	88.4086629881	26.4825260888	8.3289245320	.9759274507
-0.6	.0000582817	1.2150408132	.8423121714	.0166061583	73.0392219525	22.7847936025	7.5151455578	.9725195297
-0.5	.0000518054	1.1410903363	.8397403673	.0167714447	60.2033231119	19.5672983226	6.7794120177	.9685557412
-0.4	.0000463868	1.0687667102	.8368974821	.0169622138	49.5148909908	16.7728625470	6.1148121046	.9639349255
-0.3	.0000418329	.9981748450	.8337778543	.0171765700	40.6416338299	14.3505425243	5.5150294298	.9585368719
-0.2	.0000379899	.9294233536	.8303754968	.0174124695	33.2981330560	12.2549589067	4.9742779888	.9522191055
-0.1	.0000347345	.8626238407	.8266842941	.0176676711	27.2398250660	10.4457188790	4.4872493035	.9448134719
0.0	.0000319677	.7978899827	.8226982189	.0179396905	22.2577293081	8.8869102994	4.0490687171	.9361227393
0.1	.0000296091	.7353363767	.8184115723	.0182257599	18.1738115398	7.5466534701	3.6552585850	.9259176129
0.2	.0000275936	.6750771395	.8138192455	.0185227936	14.8368959976	6.3966999899	3.3017066782	.9139347955
0.3	.0000258675	.6172242475	.8089170042	.0188273647	12.1190579665	5.4120709320	2.9846385492	.8998770513
0.4	.0000243871	.5618856166	.8037017899	.0191356922	9.9124409569	4.5707285982	2.7005929322	.8834166176
0.5	.0000231160	.5091629357	.7981720360	.0194436462	8.1264518851	3.8532775551	2.4463994939	.8642036963
0.6	.0000220240	.4591492862	.7923279878	.0197467696	6.6852943662	3.2426916915	2.2191584324	.8418820248
0.7	.0000210858	.4119265968	.7861720171	.0200403235	5.5258052242	2.7240647738	2.0162215576	.8161134153
0.8	.0000202803	.3675630095	.7797089190	.0203193547	4.5955631386	2.2843824918	1.8351745895	.7866123501
0.9	.0000195894	.3261102517	.7729461737	.0205787895	3.8512413581	1.9123143468	1.6738204837	.7531898793
1.0	.0000189979	.2876011324	.7658941574	.0208135502	3.2571788870	1.5980239794	1.5301636511	.7158030521
1.1	.0000184926	.2520472974	.7585662849	.0210186938	2.7841466597	1.3329967007	1.4023949754	.6746023451
1.2	.0000180622	.2194373885	.7509790656	.0211895664	2.4082871041	1.1098630993	1.2888775652	.6299662399
1.3	.0000176969	.1897357492	.7431520599	.0213219664	2.1102072161	.9223576727	1.1881331920	.5825111579
1.4	.0000173880	.1628818099	.7351077251	.0214123068	1.8742068926	.7649914776	1.0988293852	.5330681061
1.5	.0000171281	.1387902558	.7268711454	.0214577655	1.6876258140	.6331378309	1.0197671586	.4826248431
1.6	.0000169105	.1173520422	.7184696505	.0214564123	1.5402936547	.5228301208	.9498693536	.4322419350
1.7	.0000167293	.0984362697	.7099323322	.0214073011	1.4240698294	.4306908116	.8881595869	.3829587660
1.8	.0000165795	.0818928736	.7012894771	.0213105188	1.3324603560	.3538507543	.8338017936	.3357079028
1.9	.0000164564	.0675560208	.6925719431	.0211671854	1.2603007253	.2898779404	.7859903613	.2912523671
2.0	.0000163559	.0552480548	.6838105079	.0209794023	1.2034949096	.2367148747	.7440408547	.2501526043
2.1	.0000162745	.0447837845	.6750352258	.0207501535	1.1588018103	.1926237730	.7073313338	.2127618973
2.2	.0000162092	.0359748901	.6662748237	.0204831649	1.1236615284	.1561388369	.6753042772	.1792435076
2.3	.0000161571	.0286342115	.6575561685	.0201827339	1.0960548443	.1260248959	.6474591234	.1496008382
2.4	.0000161159	.0225797050	.6489038277	.0198535407	1.0743902067	.1012417559	.6233454539	.1237126900
2.5	.0000160837	.0176378858	.6403397426	.0195004568	1.0574133537	.0809136358	.6025568406	.1013678676
2.6	.0000160586	.0136466251	.6318830188	.0191283618	1.0441354282	.0643031161	.5847253844	.0822957920
2.7	.0000160394	.0104572253	.6235498353	.0187419810	1.0337761004	.0507890703	.5695169641	.0661917232
2.8	.0000160247	.0079357554	.6153534615	.0183457506	1.0257187824	.0398480829	.5566272076	.0527364709
2.9	.0000160137	.0059636798	.6073043694	.0179437161	1.0194755143	.0310388969	.5457781774	.0416111574
3.0	.0000160054	.0044378541	.5994104202	.0175394642	1.0146595308	.0239894666	.5367157406	.0325078507
3.1	.0000159993	.0032699942	.5916771059	.0171360878	1.0109638765	.0183862224	.5292075661	.0251368972
3.2	.0000159948	.0023857356	.5841078259	.0167361790	1.0081447524	.0139651862	.5230416637	.0192316765
3.3	.0000159915	.0017234079	.5767041774	.0163418454	1.0060085322	.0105046109	.5180253527	.0145513616
3.4	.0000159892	.0012326387	.5694662469	.0159547444	1.0044016087	.0078188505	.5139845336	.0108821369
3.5	.0000159875	.0008728887	.5623928873	.0155761283	1.0032024063	.0057532112	.5107631272	.0080372276
3.6	.0000159863	.0006120314	.5554819735	.0152068968	1.0023150608	.0041795710	.5082225556	.0058560209
3.7	.0000159855	.0004248275	.5487306290	.0148476507	1.0016643613	.0029926011	.5062411572	.0042025124
3.8	.0000159850	.0002919690	.5421354236	.0144987445	1.0011916799	.0021064614	.5047134591	.0029632784
3.9	.0000159846	.0001986657	.5356925380	.0141603350	1.0008516640	.0014518812	.5035492655	.0020451504
4.0	.0000159843	.0001338349	.5293978999	.0138324251	1.0006095375	.0009735636	.5026725569	.0013727437
4.1	.0000159841	.0000892638	.5232472931	.0135149011	1.0004388927	.0006278794	.5020202222	.0008859728
4.2	.0000159840	.0000589441	.5172364414	.0132075638	1.0003198862	.0003808265	.5015406731	.0005376563
4.3	.0000159839	.0000385357	.5113610737	.0129101546	1.0002377729	.0002062429	.5011923986	.0002912898
4.4	.0000159839	.0000249427	.5056169709	.0126223750	1.0001817226	.0000842675	.5009425199	.0001170422
4.5	.0000159838	.0000159838	.5000000000	.0123439030	1.0001438753	.0000000000	.5007654029	.0000000001
$\xi_1=-4.4$								
-3.9	.5843545145	4.6541186792	.6604716705	.0676905144	234531.8586003351	28489.8864524620	3461.6672978738	.9998740135
-3.8	.3726344209	4.3616156705	.6850312507	.0627130176	117678.9326851529	14522.3456537106	1792.8267108278	.9998117860
-3.7	.2436092972	4.1487634477	.7069220707	.0577821747	66483.8462089189	8342.0389757287	1047.2709988226	.9997343428
-3.6	.1622844042	3.9812470460	.7262966977	.0530661369	40969.7394477505	5231.2547848062	668.4375058138	.9996405923
-3.5	.1097740148	3.8407534670	.7433561643	.0486713540	26968.2230457833	3507.1303293244	456.5203574155	.9995296064

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_1 =-4.4 (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat\mu,\hat\sigma)$
-3.4	.0752374455	3.7169140727	.7583233728	.0446544300	18686.7352383959	2477.1942681014	328.7615748518	.9994006201
-3.3	.0521796352	3.6036132691	.7714239701	.0410351568	13485.4798093509	1823.8471160695	247.0355994867	.9992529935
-3.2	.0365872703	3.4971386168	.7828738779	.0378083074	10054.0580365231	1388.4293489666	192.0880333921	.9990861448
-3.1	.0259225870	3.3951888751	.7928720860	.0349531418	7695.3905974601	1086.0102046919	153.6008384501	.9988994609
-3.0	.0185516850	3.2963155441	.8015972435	.0324404605	6016.8429805892	868.4563343227	125.6793665169	.9986921970
-2.9	.0134070421	3.1995968605	.8092067877	.0302374894	4786.3799851299	707.1511336464	104.7980094420	.9984633733
-2.8	.0097824439	3.1044422347	.8158376308	.0283110482	3861.1478123396	584.3748204370	88.7608128773	.9982116762
-2.7	.0072055554	3.0104724528	.8216077074	.0266294538	3150.0364765340	488.7647520963	76.1516549184	.9979353669
-2.6	.0053573183	2.9174450728	.8266179142	.0251635490	2593.1170568124	412.8103418553	66.0295141239	.9976321977
-2.5	.0040202216	2.8252073392	.8309541487	.0238871525	2149.8798355575	351.4133758733	57.7525723449	.9972993328
-2.4	.0030446894	2.7336661393	.8346892750	.0227771496	1792.2629730082	301.0305470038	50.8729851785	.9969332714
-2.3	.0023270058	2.6427686573	.8378849278	.0218133722	1500.3892913335	259.1464155551	45.0719041715	.9965297652
-2.2	.0017946761	2.5524898249	.8405931142	.0209783673	1259.8859811684	223.9402681387	40.1182013762	.9960837270
-2.1	.0013966325	2.4628241352	.8428576075	.0202571172	1060.1578032146	194.0702524548	35.8415796216	.9955891220
-2.0	.0010966269	2.3737802852	.8447151424	.0196367482	893.2502575826	168.5303927711	32.1146543062	.9950388376
-1.9	.0008687382	2.2853776672	.8461964284	.0191062517	753.0866931613	146.5540229776	28.8407707578	.9944245245
-1.8	.0006942947	2.1976440815	.8473270051	.0186562255	634.9475943982	127.5474469975	25.9455726529	.9937364016
-1.7	.0005597496	2.1106142593	.8481279594	.0182786432	535.1097327175	111.0436788135	23.3710747501	.9929630182
-1.6	.0004552054	2.0243289285	.8486165275	.0179666498	450.5926397106	96.6697601386	21.0714392706	.9920909636
-1.5	.0003733803	1.9388342459	.8488065981	.0177143838	378.9781966729	84.1234036332	19.0099309114	.9911045142
-1.4	.0003088803	1.8541814743	.8487091354	.0175168218	318.2806796086	73.1561287583	17.1566995463	.9899852052
-1.3	.0002576833	1.7704268248	.8483325350	.0173696437	266.8520137856	63.5609709827	15.4871518142	.9887113119
-1.2	.0002167699	1.6876314062	.8476829262	.0172691157	223.3118421430	55.1634444399	13.9807464226	.9872572224
-1.1	.0001838593	1.6058612398	.8467644302	.0172119865	186.4952378874	47.8148384690	12.6200972313	.9855926796
-1.0	.0001572171	1.5251873081	.8455793850	.0171953957	155.4130689759	41.3872002352	11.3903016850	.9836818684
-0.9	.0001355166	1.4456856108	.8441285445	.0172167920	129.2215104557	35.7695427969	10.2784353072	.9814823162
-0.8	.0001177365	1.3674372049	.8424112588	.0172738576	107.1982289365	30.8649485826	9.2731692150	.9789435748
-0.7	.0001030859	1.2905282076	.8404256428	.0173644392	88.7234802266	26.5883303685	8.3644791470	.9760056472
-0.6	.0000909487	1.2150497399	.8381687391	.0174864824	73.2648642423	22.8646774264	7.5434227957	.9725971200
-0.5	.0000808424	1.1410977882	.8356366806	.0176379696	60.3648363920	19.6276615677	6.8019682510	.9686329688
-0.4	.0000723866	1.0687729597	.8328248567	.0178168605	49.6303262507	16.8185117561	6.1328607711	.9640120119
-0.3	.0000652802	.9981801088	.8297280906	.0180210344	40.7239931754	14.3850905823	5.5295183425	.9586140091
-0.2	.0000592831	.9294278046	.8263408282	.0182482351	33.3567758724	12.2811237948	4.9859488958	.9522964476
-0.1	.0000542031	.8626276178	.8226573454	.0184960180	27.2814837495	10.4655471428	4.4966838379	.9448911219
0.0	.0000498855	.7978931981	.8186719744	.0187617021	22.2872427174	8.9019443164	4.0567238956	.9362007331
0.1	.0000462050	.7353391213	.8143793519	.0190423266	18.1946544137	7.5580567360	3.6614942706	.9259958977
0.2	.0000430596	.6750794877	.8097746896	.0193346154	14.8515609432	6.4053510283	3.3068068573	.9140132036
0.3	.0000403661	.6172262602	.8048540651	.0196349517	12.1293309534	5.4186337371	2.9888278407	.8999552682
0.4	.0000380559	.5618873439	.7996147317	.0199393661	9.9195999145	4.5757055162	2.7040494163	.8834941459
0.5	.0000360723	.5091644194	.7940554394	.0202435401	8.1314097937	3.8570490153	2.4492646974	.8642798189
0.6	.0000343683	.4591505609	.7881767615	.0205428306	6.6887022986	3.2455460826	2.2215451135	.8419557710
0.7	.0000329043	.4119276917	.7819814142	.0208323153	5.5281265003	2.7262209298	2.0182197860	.8161835392
0.8	.0000316473	.3675639492	.7754745573	.0211068639	4.5971266550	2.2860066313	1.8368565029	.7866773321
0.9	.0000305692	.3261110570	.7686640589	.0213612339	3.8522799105	1.9135328461	1.6752440161	.7532479628
1.0	.0000296461	.2876018211	.7615607083	.0215901914	3.2578566832	1.5989330138	1.5313754609	.7158523257
1.1	.0000288576	.2520478850	.7541783587	.0217886533	2.7845790523	1.3336695289	1.4034327492	.6746408734
1.2	.0000281860	.2194378881	.7465339818	.0219518463	2.4085547258	1.1103755728	1.2897718339	.6299922336
1.3	.0000276158	.1897361724	.7386476217	.0220754734	2.1103660915	.9227124067	1.1889087665	.5825231581
1.4	.0000271339	.1628821669	.7305422357	.0221558804	1.8742956603	.7652410126	1.0995064920	.5330651477
1.5	.0000267283	.1387905554	.7222434191	.0221902086	1.6876708753	.6333070310	1.0203623413	.4826065601
1.6	.0000263887	.1173522924	.7137790161	.0221765237	1.5403128360	.5229379956	.9503961897	.4322085834
1.7	.0000261060	.0984364773	.7051786277	.0221139081	1.4240749811	.4307519012	.8886392586	.3829111624
1.8	.0000258722	.0818930448	.6964730367	.0220025090	1.3324591915	.3538761831	.8342235437	.3356472974
1.9	.0000256801	.0675561610	.6876935745	.0218435358	1.2602981172	.2898762209	.7863718580	.2911802843
2.0	.0000255233	.0552481687	.6788714617	.0216392046	1.2034938005	.2366925200	.7443884838	.2500706840
2.1	.0000253963	.0447838764	.6700371569	.0213926342	1.1588038492	.1925857646	.7076504337	.2126717620
2.2	.0000252943	.0359749636	.6612197471	.0211076999	1.1236675128	.1560889824	.6755993274	.1791466671
2.3	.0000252130	.0286342698	.6524464094	.0207888564	1.0960650252	.1259661027	.6477338968	.1494986327
2.4	.0000251488	.0225797508	.6437419703	.0204409436	1.0744044978	.1011762412	.6236031394	.1236062656
2.5	.0000250985	.0176379215	.6351285764	.0200689887	1.0574314721	.0808430869	.6028001421	.1012581758
2.6	.0000250594	.0136466527	.6266254867	.0196780182	1.0441569890	.0642288144	.5849566007	.0821836040
2.7	.0000250294	.0104572464	.6182489835	.0192728918	1.0338006780	.0507119859	.5697380540	.0660776514
2.8	.0000250065	.0079357715	.6100123938	.0188581642	1.0257459495	.0397689478	.5568398421	.0526209937
2.9	.0000249892	.0059636918	.6019262051	.0184379822	1.0195048657	.0309582609	.5459837824	.0414946431
3.0	.0000249763	.0044378631	.5939982585	.0180160161	1.0146906966	.0239077408	.5369155321	.0323905793
3.1	.0000249668	.0032700008	.5862339955	.0175954242	1.0109965286	.0183037122	.5294025790	.0250190792
3.2	.0000249598	.0023857404	.5786367394	.0171788475	1.0081786061	.0138821173	.5232327758	.0191134683
3.3	.0000249547	.0017234114	.5712079926	.0167684273	1.0060433454	.0104211483	.5182133050	.0144328785
3.4	.0000249510	.0012326412	.5639477320	.0163658412	1.0044371782	.0077351143	.5141699481	.0107634625
3.5	.0000249484	.0008728905	.5568546909	.0159723504	1.0032385661	.0056692875	.5109465221	.0079184222
3.6	.0000249466	.0006120026	.5499266180	.0155888544	1.0023516749	.0040955212	.5084043589	.0057371273
3.7	.0000249453	.0004248284	.5431605083	.0152159460	1.0017013212	.0029084679	.5064217191	.0040835605
3.8	.0000249444	.0002919696	.5365528018	.0148539662	1.0012288998	.0020222745	.5048930631	.0028442891
3.9	.0000249438	.0001986661	.5300995515	.0145030544	1.0008890772	.0013676607	.5037281387	.0019261375
4.0	.0000249434	.0001338352	.5237965605	.0141631930	1.0006470928	.0008893229	.5028508789	.0012537167
4.1	.0000249431	.0000892640	.5176394917	.0138342459	1.0004765511	.0005436271	.5021981332	.0007669377
4.2	.0000249429	.0000589442	.5116239533	.0135159909	1.0003576186	.0002965679	.5017182814	.0004186168
4.3	.0000249428	.0000385357	.5057455640	.0132081457	1.0002755578	.0001219815	.5013697866	.0001722484
4.4	.0000249427	.0000249427	.5000000000	.0129103887	1.0002195443	.0000000000	.5011197494	.0000000001

ξ_1 =-4.3

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat\mu,\hat\sigma)$
-3.8	.6039229113	4.5753869783	.6570718661	.0683006547	221538.0403556624	27575.2821989604	3433.2580286807	.9998678140
-3.7	.3882255039	4.2794782046	.6812454789	.0634780812	110737.3020721636	14007.0174866227	1772.4298505043	.9998023974
-3.6	.2559310179	4.0639388687	.7028459274	.0586790991	62303.4875157922	8015.1527497792	1031.7007597206	.9997208493
-3.5	.1719636702	3.8943545606	.7220113871	.0540675617	38224.3597060411	5005.6304334941	656.0029802544	.9996219100
-3.4	.1173460575	3.7523114869	.7389273007	.0497497967	25044.8585913534	3341.4110779310	446.2433564682	.9995044554
-3.3	.0811465063	3.6273449510	.7538015554	.0457849523	17271.2005586041	2349.6373210749	320.0580055020	.9993674977
-3.2	.0567864846	3.5132553993	.7668464412	.0421967237	12403.2162796632	1722.0778264424	239.4735523388	.9992101527
-3.1	.0401800344	3.4062600767	.7782666315	.0389841936	9201.6131936730	1304.9482441294	185.4232424848	.9990315765
-3.0	.0287284924	3.3040008671	.7882520195	.0361307429	7008.1123903801	1016.0342375491	147.6494068604	.9988308794
-2.9	.0207482629	3.2049844875	.7969741253	.0336107904	5452.4889452965	808.8031337142	120.3099709919	.9986070260
-2.8	.0151320748	3.1082546708	.8045849360	.0313945612	4316.2772170141	655.6260277204	99.9147954824	.9983587290
-2.7	.0111423835	3.0131947358	.8112172798	.0294512545	3465.1734076778	539.4162665711	84.2924385393	.9980843443
-2.6	.0082824223	2.9194060863	.8169860800	.0277510109	2813.6407086481	449.2301836835	72.0440450655	.9977817695
-2.5	.0062142263	2.8266321523	.8219900411	.0262660279	2305.4911635354	377.8419684363	62.2409335655	.9974483473

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-4.3$ (Continued)								
-2.4	.0047057291	2.7347101211	.8263134779	.0249711012	1902.7918011808	320.3513996548	54.2501943949	.9970807707
-2.3	.0035961873	2.6435399549	.8300281162	.0238437987	1579.2976003635	273.3555815373	47.6304623554	.9966749881
-2.2	.0027733323	2.5530643202	.8331947677	.0228644110	1316.4404725000	234.4404343376	42.0676234738	.9962260996
-2.1	.0021581236	2.4632554857	.8358648354	.0220157774	1100.8106961604	201.8596583170	37.3340217057	.9957282427
-2.0	.0016944810	2.3741067209	.8380816348	.0212830506	922.5362093743	174.3269586205	33.2619145998	.9951744574
-1.9	.0013423147	2.2856266290	.8398815357	.0206534398	774.2167328929	150.8785734057	29.7258062377	.9945565251
-1.8	.0010727530	2.1978354091	.8412949376	.0201159570	650.2091072925	130.7805227308	26.6304492681	.9938647744
-1.7	.0008648532	2.1107623991	.8423470977	.0196611769	546.1397869346	113.4649402076	23.9025496488	.9930878439
-1.6	.0007033157	2.0244444737	.8430588304	.0192810186	458.5671026609	98.4856983526	21.4849400777	.9922123941
-1.5	.0005768858	1.9389250177	.8434470957	.0189685507	384.7439621263	85.4870633438	19.3324304045	.9912227569
-1.4	.0004772272	1.8542532864	.8435254968	.0187178176	322.4489219839	74.1812886631	17.4088165946	.9901005093
-1.3	.0003981240	1.7704840275	.8433046988	.0185236885	269.8644202395	64.3324267379	15.6847022436	.9888239574
-1.2	.0003349106	1.6876772760	.8427927854	.0183817230	225.4879168874	55.7445180572	14.1358975921	.9873675108
-1.1	.0002840624	1.6058982603	.8419955632	.0182880533	188.0662361398	48.2528939639	12.7422337551	.9857009267
-1.0	.0002428994	1.5252173737	.8409168260	.0182392800	156.5464212424	41.7177138025	11.4866784558	.9837883977
-0.9	.0002093717	1.4457101756	.8395585871	.0182323777	130.0384460687	36.0191175805	10.3546725360	.9815874541
-0.8	.0001819012	1.3674573915	.8379212865	.0182646099	107.7865154154	31.0535543803	9.3336292575	.9790476458
-0.7	.0001592659	1.2905448882	.8360039938	.0183334509	89.1466435820	26.7309714862	8.4125543351	.9761089690
-0.6	.0001405140	1.2150635958	.8338045725	.0184365122	73.5688677555	22.9726370460	7.5817559262	.9726999986
-0.5	.0001248998	1.1411093547	.8313198803	.0185714738	60.5829207374	19.7094315735	6.8326219024	.9687356924
-0.4	.0001118357	1.0687826601	.8285459425	.0187360184	49.7865179105	16.8804883955	6.1574476012	.9641148429
-0.3	.0001008563	.9981882790	.8254781443	.0189277686	40.8356476117	14.4320954769	5.5493015475	.9587171739
-0.2	.0000915969	.9294347131	.8221114336	.0191442274	33.4364207880	12.3167945026	5.0019197965	.9524001227
-0.1	.0000837424	.8626334803	.8184405386	.0193827214	27.3381547475	10.4926301695	4.5096218955	.9449954157
0.0	.0000770717	.7978981888	.8144602053	.0196403492	22.3274508357	8.9225151067	4.0672432080	.9363056623
0.1	.0000713854	.7353433814	.8101654554	.0199139358	18.2230867223	7.5736849613	3.6700796475	.9261013566
0.2	.0000665259	.6750831324	.8055518652	.0201999947	14.8715876278	6.4172248618	3.3138418514	.9141189265
0.3	.0000623645	.6172293841	.8006158653	.0204947017	12.1433721546	5.4276533598	2.9946165607	.9000607845
0.4	.0000587953	.5618900250	.7953550575	.0207938814	9.9293909653	4.5825535243	2.7088335280	.8835987291
0.5	.0000557307	.5091667223	.7897685434	.0210930119	8.1381928824	3.8622434734	2.4532366940	.8643824340
0.6	.0000530979	.4591525395	.7838572568	.0213872494	6.6933648731	3.2494805333	2.2248586909	.8420550276
0.7	.0000508361	.4119293911	.7776242890	.0216714755	5.5313011423	2.7291945891	2.0209979678	.8162776611
0.8	.0000488941	.3675654077	.7710751934	.0219403707	4.5992630900	2.2882471977	1.8391980143	.7867641599
0.9	.0000472285	.3261123070	.7642182541	.0221885135	3.8536968818	1.9152137442	1.6772282934	.7533250064
1.0	.0000458024	.2876028902	.7570647004	.0224105048	3.2587792813	1.6001864420	1.5330665944	.7159168809
1.1	.0000445841	.2520487970	.7496288495	.0226011141	2.7851655470	1.3345963408	1.4048825939	.6746902074
1.2	.0000435464	.2194386636	.7419281605	.0227554425	2.4089158270	1.1110527684	1.2910224676	.6300238251
1.3	.0000426656	.1897368294	.7339831850	.0228690939	2.1105787551	.9231988161	1.1899944358	.5825349578
1.4	.0000419210	.1628627210	.7258174035	.0229383442	1.8744129657	.7655816123	1.1004551568	.5330558075
1.5	.0000412943	.1387910206	.7174569437	.0229602978	1.6877290792	.6335362259	1.0211969021	.4825755809
1.6	.0000407697	.1173526806	.7089301846	.0229330169	1.5403363981	.5230821154	.9511354658	.4321563457
1.7	.0000403330	.0984367995	.7002672556	.0228556151	1.4240801351	.4308311026	.8892987686	.3828388374
1.8	.0000399717	.0818933104	.6914994527	.0227283040	1.3324564745	.3539058997	.8348161298	.3355566662
1.9	.0000396749	.0675563785	.6826585962	.0225523875	1.2602941554	.2898682699	.7869081862	.2910735118
2.0	.0000394326	.0552483455	.6737763630	.0223302022	1.2034925643	.2366559473	.7448774459	.2499500944
2.1	.0000392365	.0447840190	.6648836277	.0220650085	1.1588075307	.1925274913	.7080994701	.2125396509
2.2	.0000390789	.0359750777	.6560098463	.0217608377	1.1236771359	.1560142996	.6760146874	.1790051674
2.3	.0000389533	.0286343603	.6471825141	.0214223089	1.0960808673	.1258790507	.6481208484	.1493496348
2.4	.0000388540	.0225798220	.6384267212	.0210544277	1.0744263769	.1010799002	.6239661386	.1234513839
2.5	.0000387763	.0176379771	.6297648234	.0206623829	1.0574589426	.0807398004	.6031429790	.1010987484
2.6	.0000387160	.0136466956	.6212162348	.0202513534	1.0441894703	.0641203606	.5852824744	.0820207133
2.7	.0000386696	.0104572792	.6127973415	.0198263371	1.0338375398	.0505997101	.5700497161	.0659121553
2.8	.0000386342	.0079357963	.6045215265	.0193920111	1.0257865646	.0396538643	.5571396338	.0524535608
2.9	.0000386076	.0059637165	.5963992913	.0189526258	1.0195486429	.0308411281	.5462737027	.0413257870
3.0	.0000385876	.0044378770	.5884384535	.0185119364	1.0147370980	.0237891268	.5371972865	.0322206894
3.1	.0000385728	.0032700111	.5806444002	.0180731676	1.0110450781	.0181840374	.5296776194	.0248484468
3.2	.0000385620	.0023857479	.5730203752	.0176390094	1.0082288916	.0137616911	.5235023344	.0189423095
3.3	.0000385542	.0017234168	.5655677812	.0172116361	1.0060950164	.0103001966	.5184784224	.0142613512
3.4	.0000385485	.0012326450	.5582864810	.0167927445	1.0044899418	.0076138002	.5144314977	.0105916813
3.5	.0000385445	.0008728932	.5511750835	.0163836035	1.0032921810	.0055477277	.5112052319	.0077464689
3.6	.0000385417	.0006120045	.5442312072	.0159851102	1.0024059455	.0039737979	.5086608305	.0055650596
3.7	.0000385397	.0004248297	.5374517137	.0155978476	1.0017560968	.0027866385	.5066764447	.0039114186
3.8	.0000385383	.0002919705	.5308329096	.0152221419	1.0012840447	.0019003782	.5051464413	.0026721003
3.9	.0000385374	.0001986667	.5243707159	.0148581122	1.0009445012	.0012457236	.5039804888	.0017539202
4.0	.0000385367	.0001336356	.5180608074	.0145057184	1.0007027218	.0007673622	.5031024534	.0010814829
4.1	.0000385363	.0000892643	.5118987229	.0141648003	1.0005323289	.0004216537	.5024491295	.0005946951
4.2	.0000385360	.0000589444	.5058799520	.0138351104	1.0004135033	.0001745886	.5019688517	.0002463700
4.3	.0000385359	.0000385359	.5000000000	.0135163412	1.0003315182	.0000000000	.5016200469	.0000000001
$\xi_1=-4.2$								
-3.7	.6240400349	4.4972191800	.6536417097	.0689045165	209044.4073181154	26678.4840013251	3405.6840950294	.9998611410
-3.6	.4043765016	4.1979281230	.6774139643	.0642389771	104100.1895496231	13504.7895984433	1752.6817849712	.9997922876
-3.5	.2687586713	3.9797037654	.6987070026	.0595757683	58322.1210895585	7698.4929125241	1016.6726148871	.9997063144
-3.4	.1821572012	3.8080405986	.7176457533	.0550740294	35629.3779942432	4788.3608450987	644.0370488347	.9996017815
-3.3	.1253808681	3.6644270896	.7344008650	.0508394301	23237.7443086494	3182.7474103213	436.3855779334	.9994773516
-3.2	.0874795947	3.5383138017	.7491657932	.0469331441	15948.6747505339	2228.1910871084	311.7172633554	.9993317932
-3.1	.0617685163	3.4236147269	.7621398086	.0433823469	11397.8186782056	1635.7034497745	232.2669669855	.9991639516
-3.0	.0441548321	3.3158810692	.7735166690	.0401901339	8414.1227718761	1226.2997310647	179.0924146461	.9989726880
-2.9	.0318186776	3.2132991562	.7834765549	.0373438291	6376.6452446121	951.4430997281	142.0143023714	.9987567965
-2.8	.0231809694	3.1141315597	.7921843426	.0348213913	4936.6877446767	753.1427709998	115.2418186066	.9985149032
-2.7	.0170669954	3.0173877011	.7997861988	.0325960366	3888.7979462956	607.7649317826	95.3193994862	.9982453581
-2.6	.0126818133	2.9224247362	.8064106741	.0306393831	[illegible]	497.8320830153	80.0995113607	.9979461225
-2.5	.0095125932	2.8288244782	.8121694794	.0289234599	2519.6689125652	412.8100314723	68.2001604990	.9976146575
-2.4	.0072520648	2.7363159714	.8171589465	.0274218958	2047.6118212373	345.7510247756	58.7047359115	.9972478130
-2.3	.0055641617	2.6447260924	.8214616154	.0261105417	1682.2175727513	291.9482216664	50.9890701965	.9968417165
-2.2	.0042435363	2.5539476562	.8251479370	.0249677217	1389.9763616547	248.1359718997	44.6181826308	.9963916560
-2.1	.0033019338	2.4639186401	.8282777589	.0239742510	1154.7031144072	211.9994114260	39.2826513500	.9958919543
-2.0	.0025924098	2.3746048326	.8309017624	.0231133176	960.5094786229	181.8652104785	34.7582861239	.9953358263
-1.9	.0020535355	2.2860243166	.8330627038	.0223702915	801.6171152681	156.5016636094	30.8799170299	.9947152127
-1.8	.0016410923	2.1981294888	.8347965014	.0217325028	670.0069286829	134.9865683550	27.5239693173	.9940205830
-1.7	.0013230138	2.1109908374	.8361331706	.0211890127	563.4638869201	116.6181741622	24.5965429775	.9932406973
-1.6	.0010758797	2.0246220587	.8370976233	.0207303936	468.5385066554	100.8540957265	22.0257486606	.9923623185
-1.5	.0008824624	1.9390649241	.8377103475	.0203485240	392.2563771147	87.2687929452	19.7549781806	.9913698634

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
ξ_1=-4.2 (Continued)								
-1.4	.0007300056	1.8543636516	.8379879836	.0200364024	327.8909152478	75.5234855838	17.7398265855	.9902449776
-1.3	.0006089969	1.7705719387	.8379438132	.0197879807	273.8060547533	65.3447107684	15.9446536863	.9889660220
-1.2	.0005122975	1.6877477694	.8375881760	.0195980151	228.3418394517	56.5087807313	14.3405437238	.9875074487
-1.1	.0004345145	1.6059551533	.8369288262	.0194619340	190.1315068084	48.8304495383	12.9037316742	.9858390470
-1.0	.0003715479	1.5252635782	.8359712405	.0193757200	158.0399351208	42.1545546566	11.6144366209	.9839250329
-0.9	.0003202613	1.4457479260	.8347188895	.0193358037	131.1175695373	36.3497962650	10.4559905708	.9817229516
-0.8	.0002782406	1.3674884136	.8331734785	.0193389674	108.5654394749	31.3040631099	9.4141835894	.9791823608
-0.7	.0002436164	1.2905705222	.8313351698	.0193822574	89.7082230710	26.9208851784	8.4767684995	.9762432570
-0.6	.0002149326	1.2150848889	.8292027899	.0194629017	73.9732054705	23.1167125948	7.6330840152	.9728342073
-0.5	.0001910484	1.1411271297	.8267740321	.0195782337	60.8735978598	19.8188039549	6.8737662378	.9688701523
-0.4	.0001710652	1.0687975670	.8240456574	.0197256200	49.9951190679	16.9635668422	6.1905263615	.9642498550
-0.3	.0001542708	.9982008344	.8210137016	.0199023912	40.9850485275	14.4952359201	5.5759781662	.9588529950
-0.2	.0001400982	.9294453298	.8176736921	.0201057775	33.5431771902	12.3648047563	5.0235030648	.9525369450
-0.1	.0001280929	.8626424896	.8140208789	.0203328480	27.4142381159	10.5291498610	4.5271435496	.9451333411
0.0	.0001178893	.7979058581	.8100504836	.0205804548	22.3815093082	8.9503016712	4.0815181722	.9364446682
0.1	.0001091913	.7353499280	.8057579682	.0208451846	18.2613607657	7.5948291077	3.6817528882	.9262412534
0.2	.0001017582	.6750887334	.8011393238	.0211233188	14.8985747183	6.4333130294	3.3234248767	.9142593043
0.3	.0000953929	.6172341847	.7961913796	.0214108052	12.1623090228	5.4398902983	3.0025158981	.9002009501
0.4	.0000899333	.5618941451	.7909121279	.0217032443	9.9426032770	4.5918548539	2.7153729780	.8837376353
0.5	.0000852457	.5091702612	.7853010605	.0219958934	8.1473486291	3.8693056260	2.4586747475	.8645186060
0.6	.0000812186	.4591555800	.7793595080	.0222836920	6.6996578537	3.2548336509	2.2294021832	.8421864976
0.7	.0000777589	.4119320028	.7730909706	.0225613116	5.5355837144	2.7332425394	2.0248127992	.8164019270
0.8	.0000747884	.3675676490	.7665014279	.0228232307	4.6021421305	2.2912978953	1.8424175822	.7868781897
0.9	.0000722407	.3261142278	.7595996104	.0230638373	3.8556030822	1.9175021254	1.6799601353	.7534253118
1.0	.0000700593	.2876045330	.7523972166	.0232775571	3.2600171306	1.6018918927	1.5353976303	.7159996818
1.1	.0000681958	.2520501984	.7449090561	.0234590043	2.7859493385	1.3358559279	1.4068832718	.6747516912
1.2	.0000666086	.2194398554	.7371531024	.0236031480	2.4093955590	1.1119712919	1.2927500467	.6300604822
1.3	.0000652613	.1897378390	.7291504404	.0237054884	2.1108587322	.9238564538	1.1914955919	.5825439448
1.4	.0000641222	.1628835726	.7209250981	.0237622293	1.8745651322	.7660397372	1.1017680538	.5330352663
1.5	.0000631637	.1387917353	.7125037594	.0237704368	1.6878025571	.6338418375	1.0223528426	.4825248421
1.6	.0000623613	.1173532773	.7039153593	.0237281712	1.5403642922	.5232712185	.9521602082	.4320759692
1.7	.0000616933	.0984372947	.6951905760	.0236345800	1.4240843757	.4309312848	.8902135803	.3827304851
1.8	.0000611407	.0818937187	.6863612370	.0234899429	1.3324512522	.3539383004	.8356386316	.3354228478
1.9	.0000606866	.0675567128	.6774596678	.0232956638	1.2602883478	.2898490848	.7876530297	.2909172671
2.0	.0000603161	.0552486172	.6685180160	.0230542063	1.2034914433	.2365975801	.7455568584	.2497746794
2.1	.0000600160	.0447842381	.6595675838	.0227689790	1.1588139571	.1924394353	.7087236934	.2123482759
2.2	.0000597749	.0359752530	.6506382066	.0224441764	1.1236923906	.1559038132	.6765923318	.1788008101
2.3	.0000595828	.0286344994	.6417577051	.0220845888	1.0961052244	.1257516764	.6486591785	.1491349303
2.4	.0000594310	.0225799314	.6329514393	.0216953944	1.0744594963	.1009398622	.6244713045	.1232285789
2.5	.0000593122	.0176380624	.6242419776	.0212819497	1.0575001343	.0805903111	.6036201944	.1008697017
2.6	.0000592199	.0136467615	.6156488909	.0208495907	1.0442378710	.0639638559	.5857362039	.0817869255
2.7	.0000591489	.0104573297	.6071886695	.0204034586	1.0338922271	.0504380304	.5704837440	.0656748134
2.8	.0000590949	.0079358346	.5988747515	.0199483555	1.0258466293	.0394883936	.5575572001	.0522135877
2.9	.0000590540	.0059637392	.5907176500	.0194886384	1.0196132320	.0306729051	.5466775754	.0410838893
3.0	.0000590235	.0044378983	.5827251563	.0190281488	1.0148054385	.0236189222	.5375898282	.0319774009
3.1	.0000590009	.0032700268	.5749025992	.0185701783	1.0111164874	.0180124217	.5300608427	.0246041660
3.2	.0000589844	.0023857594	.5672531385	.0181174657	1.0083027796	.0135890826	.5238779475	.0186973303
3.3	.0000589724	.0017234251	.5597780730	.0176722177	1.0061708820	.0101268993	.5188478687	.0140158876
3.4	.0000589637	.0012326509	.5524771464	.0172361489	1.0045673665	.0074400328	.5147959892	.0103458873
3.5	.0000589576	.0008728974	.5453488390	.0168105342	1.0033708204	.0053736455	.5115657788	.0075004538
3.6	.0000589532	.0006120075	.5383906341	.0163962667	1.0024855202	.0037995097	.5090182679	.0053189000
3.7	.0000589502	.0004248317	.5315992555	.0159939176	1.0018363773	.0026122193	.5070314561	.0036651672
3.8	.0000589481	.0002919719	.5249708720	.0156037948	1.0013648666	.0017258785	.5054995804	.0024257926
3.9	.0000589467	.0001986677	.5185012690	.0152259960	1.0010257211	.0010711769	.5043321990	.0015075797
4.0	.0000589457	.0001338363	.5121859890	.0148604562	1.0007842341	.0005927901	.5034530855	.0008351245
4.1	.0000589451	.0000892647	.5060204434	.0145069886	1.0006140535	.0002470694	.5027989578	.0003483282
4.2	.0000589446	.0000589446	.5000000000	.0141653184	1.0004953803	.0000000000	.5023180878	.0000000001
ξ_1=-4.1								
-3.6	.6447162065	4.4196254430	.6501815271	.0695016182	197039.0234386319	25799.0534978181	3378.9531502952	.9998539456
-3.5	.4211020199	4.1169798681	.6735369196	.0649949660	97756.3010572786	13015.1914852202	1733.5895315684	.9997813797
-3.4	.2822308812	3.8960771372	.6945053485	.0604712071	54551.7321357805	7391.6552855574	1002.1751407462	.9996906259
-3.3	.1928869766	3.7223274260	.7131994382	.0560843997	33177.2253755050	4579.0782577567	632.5296826906	.9995800485
-3.2	.1339298996	3.5771315864	.7297759035	.0519390518	21539.4025601396	3030.7992020534	426.9334673508	.9994480787
-3.1	.0942626980	3.4498483223	.7444143758	.0480978555	14713.3844601121	2112.5357951283	303.7453858602	.9992932184
-3.0	.0671523742	3.3341207475	.7573014788	.0445910381	10464.1063408733	1534.4209666897	225.4015008339	.9991140130
-2.9	.0483762171	3.2260324255	.7686198263	.0414253924	7686.8826772556	1152.1939770069	173.0808832621	.9989089928
-2.8	.0352190232	3.1231155882	.7785411039	.0385919856	5796.6835094378	888.9311656330	136.6806186605	.9986765911
-2.7	.0259005992	3.0237894375	.7872222584	.0360722132	4465.4777529497	701.2086902682	110.4598420632	.9984150429
-2.6	.0192352268	2.9270293956	.7948038875	.0338422537	3500.2862334788	563.3110927147	90.9966812863	.9981222724
-2.5	.0144226118	2.8321664807	.8014100819	.0318761651	2782.8300403144	459.3758649784	76.1669114429	.9977957736
-2.4	.0109163488	2.7387627834	.8071491561	.0301479167	2237.9998474604	379.2683176125	64.6049893565	.9974324868
-2.3	.0083395201	2.6465327615	.8121148659	.0286326358	1816.5979407832	316.3121396974	55.4061032074	.9970286724
-2.2	.0064296627	2.5552927639	.8163878415	.0273073005	1485.5022320748	265.9892602979	47.9546529231	.9965797799
-2.1	.0050024009	2.4649282689	.8200370660	.0261510612	1221.8581454298	225.1680820036	41.8219385345	.9960803085
-2.0	.0039271325	2.3753724114	.8231212958	.0251453217	1009.5400287987	191.6307443943	36.7031774959	.9955236525
-1.9	.0031106064	2.2865917952	.8256903687	.0242736746	836.9347030936	163.7753651990	32.3776282470	.9949019277
-1.8	.0024857282	2.1985770617	.8277863767	.0235217543	695.5185291806	140.4237767233	28.6827004969	.9942057671
-1.7	.0020038623	2.1113365935	.8294446954	.0228770491	578.9236122933	120.6945996070	25.4967630601	.9934240796
-1.6	.0016294977	2.0248923018	.8306948784	.0223286989	482.3128427862	103.9177787119	22.7274942624	.9925437601
-1.5	.0013365216	1.9392768119	.8315614268	.0218672944	401.9541805775	89.5760152672	20.3038440453	.9915493400
-1.4	.0011055992	1.8545315898	.8320644479	.0214846867	334.9259878846	77.2639965808	18.1703979859	.9904225628
-1.3	.0009223168	1.7707057061	.8322202181	.0211738105	278.9100580208	66.6596151154	16.2833686301	.9891418714
-1.2	.0007758577	1.6878550315	.8320416642	.0209285235	232.0442401290	57.5033944275	14.6077080887	.9876817855
-1.1	.0006580515	1.6060417199	.8315387772	.0207434620	192.8161237107	49.5836131977	13.1150050507	.9860121489
-1.0	.0005626872	1.5253338803	.8307189700	.0206139096	159.9853620325	42.7254354034	11.7819380796	.9840972201
-0.9	.0004850137	1.4458053646	.8295873903	.0205356792	132.5261943646	36.7828882082	10.5891281802	.9818945762
-0.8	.0004213740	1.3675356143	.8281471999	.0205050057	109.5843613555	31.6328836909	9.5202809781	.9793537959
-0.7	.0003689367	1.2906095245	.8263998271	.0205184474	90.4443770801	27.1707199089	8.5615408950	.9764148859
-0.6	.0003254963	1.2151172862	.8243452029	.0205727954	74.5043251714	23.3066607728	7.7010017250	.9730064116
-0.5	.0002893250	1.1411541740	.8219819864	.0206649885	61.2561751241	19.9633080393	6.9283333656	.9690432978

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
ξ_1=-4.1 (Continued)								
-0.4	.0002590616	1.0688202476	.8193077876	.0207920335	50.2701998722	17.0735586707	6.2344953008	.9644242749
-0.3	.0002336277	.9982199373	.8163193922	.0209509303	41.1824074679	14.5789975270	5.6115151860	.9590289678
-0.2	.0002121642	.9294614828	.8130129952	.0211386014	33.6844365983	12.4286159545	5.0523164850	.9527146660
-0.1	.0001939832	.8626561969	.8093844466	.0213518262	27.5150638603	10.5777761006	4.5505831974	.9453128862
0.0	.0001785307	.7979175268	.8054295131	.0215871813	22.4532448395	8.9873620179	4.1006527190	.9366259461
0.1	.0001653584	.7353598884	.8011441595	.0218409889	18.3122101548	7.6230740896	3.6974301053	.9264239466
0.2	.0001541016	.6750972550	.7965248480	.0221092738	14.9344636318	6.4548346259	3.3363186680	.9144427951
0.3	.0001444619	.6172414887	.7915688575	.0223877334	12.1875110294	5.4562807796	3.0131630758	.9003842339
0.4	.0001361939	.5619004137	.7862746178	.0226717235	9.9601951905	4.6043270257	2.7242020665	.8839192222
0.5	.0001290959	.5091756455	.7806420542	.0229562617	8.1595413338	3.8787839280	2.4660285806	.8646964206
0.6	.0001229963	.4591602061	.7746729341	.0232360539	6.7080364797	3.2620232150	2.2355556606	.8423577889
0.7	.0001177570	.4119359762	.7683712043	.0235055455	5.5412818488	2.7386816016	2.0299868629	.8165632124
0.8	.0001132584	.3675710591	.7617433060	.0237589987	4.6059680584	2.2953975738	1.8467902357	.7870252618
0.9	.0001094001	.3261171502	.7547984500	.0239905988	3.8581311653	1.9205766518	1.6836751446	.7535533423
1.0	.0001060966	.2876070325	.7475488361	.0241945860	3.2616538698	1.6041815976	1.5385714086	.7161034491
1.1	.0001032747	.2520523307	.7400097969	.0243654099	2.7869810677	1.3375447309	1.4096103340	.6748259397
1.2	.0001008709	.2194416685	.7321998495	.0244979011	2.4100228240	1.1132000207	1.2951073400	.6301003859
1.3	.0000988305	.1897393750	.7241406399	.0245874510	2.1112210282	.9247329937	1.1935459399	.5825456074
1.4	.0000971056	.1628848682	.7158567704	.0246301883	1.8747586688	.7666467720	1.1035629008	.5329961600
1.5	.0000956540	.1387928228	.7073755056	.0246231403	1.6878929864	.6342427578	1.0239344441	.4824440853
1.6	.0000944388	.1173541851	.6987263603	.0245643662	1.5403958053	.5235146337	.9535633825	.4319543775
1.7	.0000934272	.0984380480	.6899405826	.0244530500	1.4240851846	.4310544733	.8914671126	.3825703927
1.8	.0000925904	.0818943398	.6810505509	.0242895444	1.3324421920	.3539698482	.8367664001	.3352277522
1.9	.0000919027	.0675572213	.6720891136	.0240753586	1.2602801326	.2898109064	.7886749120	.2906913891
2.0	.0000913416	.0552490306	.6630889034	.0238130897	1.2034909578	.2365064662	.7464894611	.2495225287
2.1	.0000908872	.0447845715	.6540816638	.0235063017	1.1588248622	.1923082406	.7095809407	.2120742900
2.2	.0000905221	.0359755198	.6450976194	.0231593596	1.1237162394	.1557423677	.6773859410	.1785090978
2.3	.0000902312	.0286347111	.6361649250	.0227772322	1.0961422335	.1255674848	.6493990447	.1488291211
2.4	.0000900013	.0225800979	.6273092159	.0223652770	1.0745090717	.1007386432	.6251658117	.1229117619
2.5	.0000898213	.0176381921	.6185532771	.0219290245	1.0575612276	.0803764105	.6042764679	.1005444276
2.6	.0000896815	.0136468617	.6099168388	.0214739734	1.0443097149	.0637405662	.5863603145	.0814552493
2.7	.0000895741	.0104574064	.6014164952	.0210054121	1.0339724885	.0502078365	.5710808742	.0653383568
2.8	.0000894922	.0079358928	.5930657390	.0205282717	1.0259345053	.0392531621	.5581317790	.0518736078
2.9	.0000894304	.0059637829	.5848750925	.0200470175	1.0197075068	.0304340307	.5472333892	.0407413460
3.0	.0000893842	.0044379308	.5768523174	.0195655787	1.0149050139	.0233774403	.5381301100	.0316330168
3.1	.0000893500	.0032700507	.5690026804	.0190873146	1.0112203960	.0177690952	.5305883478	.0242584781
3.2	.0000893249	.0023857768	.5613292532	.0186150124	1.0084101863	.0133444689	.5243950158	.0183507325
3.3	.0000893067	.0017234377	.5538332255	.0181509099	1.0062810788	.0098814013	.5193564777	.0136686654
3.4	.0000892936	.0012326600	.5465142178	.0176967386	1.0046797622	.0071939387	.5152978001	.0099982447
3.5	.0000892843	.0008729038	.5393705764	.0172537770	1.0034849291	.0051271584	.5120621769	.0071525346
3.6	.0000892777	.0006120119	.5323996449	.0168229119	1.0026009476	.0035527708	.5095103982	.0049708037
3.7	.0000892731	.0004248348	.5255980049	.0164047005	1.0019528083	.0023653246	.5075202563	.0033169615
3.8	.0000892700	.0002919741	.5189616830	.0159994304	1.0014820524	.0014788921	.5059858102	.0020775226
3.9	.0000892678	.0001986691	.5124863248	.0156071747	1.0011434679	.0008241404	.5048164668	.0011592745
4.0	.0000892663	.0001338372	.5061673369	.0152278411	1.0009023932	.0003457293	.5039358729	.0004868025
4.1	.0000892653	.0000892653	.5000000000	.0148612139	1.0007325120	.0000000000	.5032806412	.0000000001
ξ_1 =-4.0								
-3.5	.6659617143	4.3426158800	.6466916686	.0700914745	185506.3043088784	24936.2840678303	3353.0376098165	.9998461705
-3.4	.4384167338	4.0366479248	.6696146816	.0657452921	91694.7461021812	12537.7569777009	1715.1235126094	.9997695862
-3.3	.2962465224	3.8130777621	.6902410861	.0613644016	50962.6608511803	7094.2406896951	988.1963558673	.9996786556
-3.2	.2041754777	3.6372377357	.7086721775	.0570974627	30860.6888831237	4377.4243050087	621.4653964242	.9995565303
-3.1	.1429914031	3.4904449854	.7250515752	.0530473538	19944.5868936095	2885.2380766033	417.8739805122	.9994163897
-3.0	.1015229146	3.3619772002	.7395457144	.0492777938	13559.9040916637	2002.3663872626	296.1289771275	.9992514433
-2.9	.0729661177	3.2454042434	.7523289767	.0458216317	9597.2335946188	1447.9419554861	218.8634194848	.9990599040
-2.8	.0530344345	3.1367465471	.7635732395	.0426890280	7015.5126836179	1082.3567579696	167.3746416161	.9988399310
-2.7	.0389573330	3.0334838428	.7734411463	.0398745714	5264.2342385925	831.2638203001	131.6341346570	.9985895475
-2.6	.0289080334	2.9339928709	.7820822589	.0373629682	4035.1989215256	652.7489966000	105.9496792856	.9983065378
-2.5	.0216624076	2.8372154870	.7896312804	.0351333085	3147.3763512525	522.0236670400	86.9322209395	.9979883297
-2.4	.0163889840	2.7424566981	.7962076787	.0331620928	2489.9831169345	423.8160579697	72.4802415058	.9976318662
-2.3	.0125163425	2.6492588197	.8019161899	.0314252679	1992.7777937928	348.3845682344	61.2442403331	.9972334695
-2.2	.0096476632	2.5573215824	.8068478227	.0298995154	1609.8207967381	289.3150928758	52.3309281180	.9967886976
-2.1	.0075047444	2.4664506403	.8110811074	.0285630050	1310.2296774566	242.2746547015	45.1330914140	.9962921909
-2.0	.0058908140	2.3765239737	.8146834202	.0273957784	1072.7268629562	204.2624942240	39.2281993498	.9957375059
-1.9	.0046655306	2.2874697458	.8177122785	.0263798888	882.3219841406	173.1554993950	34.3160465756	.9951169295
-1.8	.0037280019	2.1992515870	.8202165522	.0254993877	728.2363717224	147.4216486342	30.1793133633	.9944212664
-1.7	.0030051388	2.1118587521	.8222375595	.0247402195	602.5721886348	125.9351895223	26.6579864105	.9936395910
-1.6	.0024436012	2.0252995064	.8238100395	.0240900681	499.4400164671	107.8547594211	23.6323912560	.9927589527
-1.5	.0020041807	1.9395966698	.8249630043	.0235381805	414.3755445884	92.5414026017	21.0117071105	.9917640236
-1.4	.0016578538	1.8547846133	.8257204771	.0230751859	343.9425412172	79.5024372459	18.7260503646	.9906366728
-1.3	.0013829892	1.7709072389	.8261021298	.0226929196	285.4582024825	68.3524069384	16.7209286685	.9893554530
-1.2	.0011633567	1.6880166267	.8261238321	.0223842565	236.8003071253	58.7855274274	14.9532991260	.9878949785
-1.1	.0009866983	1.6061721331	.8257981259	.0221429576	196.2699139962	50.5559933044	13.3887303940	.9862251727
-1.0	.0008436969	1.5254397891	.8251346359	.0219635286	162.4923015203	43.4637366461	11.9993361300	.9843103597
-0.9	.0007272257	1.4458918931	.8241404299	.0218410910	134.3445709126	37.3440158937	10.7622548479	.9821081680
-0.8	.0006318000	1.3676067190	.8228203378	.0217712643	110.9020549061	32.0597261643	9.6585215956	.9795682141
-0.7	.0005531729	1.2906682783	.8211772408	.0217500567	91.3981316741	27.4956625463	8.6722236477	.9766305275
-0.6	.0004880370	1.2151660898	.8192123374	.0217737659	75.1936917788	23.5541973604	7.7898640196	.9732236800
-0.5	.0004338012	1.1411949135	.8169253965	.0218388846	61.7536258895	20.1519892959	6.9998783008	.9692625832
-0.4	.0003884242	1.0688544134	.8143150030	.0219420138	50.6284708369	17.2174510802	6.2922653966	.9646459305
-0.3	.0003502887	.9982487135	.8113788041	.0220797804	41.4398461182	14.6887786017	5.6583034156	.9592532788
-0.2	.0003181067	.9294858152	.8081137609	.0222487638	33.8690073523	12.5123984446	5.0903295311	.9529418111
-0.1	.0002908464	.8626768451	.8045164106	.0224454101	27.6469872883	10.6417294296	4.5815681303	.9455428863
0.0	.0002676774	.7979351040	.8005831434	.0226659979	22.5472224046	9.0361815911	4.1259955533	.9368585999
0.1	.0002479273	.7353748923	.7963104963	.0229065525	18.3788968277	7.6603362051	3.7182326621	.9266587484
0.2	.0002310493	.6751100917	.7916954661	.0231628153	14.9815710535	6.4832651932	3.3534586465	.9146788345
0.3	.0002165959	.6172524911	.7867358383	.0234302095	12.2206117959	5.4779589906	3.0273410980	.9006200768
0.4	.0002041993	.5619098564	.7814305325	.0237038231	9.9833089493	4.6208398683	2.7359785885	.8841527781
0.5	.0001935555	.5091837561	.7757799554	.0239784136	8.1755616171	3.8913435074	2.4758529054	.8649248048
0.6	.0001844115	.4591671744	.7697863559	.0242484344	6.7190413143	3.2715559056	2.2437887835	.8425772019
0.7	.0001765557	.4119419616	.7634541690	.0245080875	5.5487595902	2.7458958446	2.0369194903	.8167688640
0.8	.0001698110	.3675761958	.7567903365	.0247514040	4.6109814188	2.3008354733	1.8526570213	.7872113826
0.9	.0001640261	.3261215524	.7498045865	.0249723528	3.8614362133	1.9246532678	1.6886659572	.7537133274
1.0	.0001590730	.2876107976	.7425096551	.0251649766	3.2637862496	1.6072148922	1.5428402641	.7162301709

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-4.0$ (Continued)								
1.1	.0001548419	.2520555425	.7349214313	.0253235514	2.7883183753	1.3397784053	1.4132824897	.6749122393
1.2	.0001512379	.2194443998	.7270590073	.0254427618	2.4108296610	1.1148209436	1.2982849377	.6301397070
1.3	.0001481787	.1897416888	.7189446207	.0255178850	2.1116814804	.9258845108	1.1963125041	.5825326773
1.4	.0001455924	.1628868199	.7106034764	.0255449717	1.8749996723	.7674388775	1.1059869291	.5329275857
1.5	.0001434160	.1387944609	.7020634464	.0255210093	1.6880010965	.6347598721	1.0260722794	.4823187268
1.6	.0001415940	.1173555526	.6933546502	.0254440570	1.5404291985	.5238215562	.9554615141	.4317734127
1.7	.0001400773	.0984391828	.6845089289	.0253133384	1.4240832218	.4312009404	.8931640236	.3823370666
1.8	.0001388226	.0818952754	.6755592323	.0251292835	1.3324275067	.3539940266	.8382940530	.3349468873
1.9	.0001377915	.0675579874	.6665389498	.0248935126	1.2602689414	.2897420715	.7900599448	.2903687815
2.0	.0001369502	.0552496532	.6574812162	.0246087634	1.2034920979	.2363670585	.7477541525	.2491643546
2.1	.0001362689	.0447850738	.6484182287	.0242787625	1.1588429187	.1921154439	.7107439905	.2116866133
2.2	.0001357215	.0359759216	.6393806129	.0239080532	1.1237530266	.1555093228	.6784631003	.1780975220
2.3	.0001352853	.0286350299	.6303968659	.0235017902	1.0961978161	.1253042232	.6504036273	.1483985868
2.4	.0001349407	.0225803467	.6214929050	.0230655177	1.0745824635	.1004528049	.6261091078	.1224664653
2.5	.0001346708	.0176383876	.6126917359	.0226049460	1.0576508616	.0800737982	.6051680801	.1000878267
2.6	.0001344612	.0136470127	.6040132498	.0221257423	1.0444132553	.0634255713	.5872084305	.0809901232
2.7	.0001343001	.0104575220	.5954741460	.0216333464	1.0340890319	.0498837688	.5718924884	.0648668929
2.8	.0001341773	.0079359804	.5870879701	.0211328217	1.0260617067	.0389225034	.5589128727	.0513974970
2.9	.0001340846	.0059638487	.5788652516	.0206287443	1.0198436531	.0300986309	.5479890781	.0402618745
3.0	.0001340154	.0044379798	.5708137194	.0201251321	1.0150485630	.0230386686	.5388647652	.0311511493
3.1	.0001339641	.0032700868	.5629385743	.0196254124	1.0113699927	.0174279570	.5313056959	.0237749281
3.2	.0001339265	.0023858031	.5552427949	.0191324200	1.0085646627	.0130016951	.5250982228	.0178660206
3.3	.0001338992	.0017234567	.5477274579	.0186484231	1.0064394456	.0095375178	.5200482206	.0131831663
3.4	.0001338796	.0012326735	.5403920549	.0181751677	1.0048411945	.0068493185	.5159803283	.0095122242
3.5	.0001338656	.0008729134	.5332347936	.0177139341	1.0036487489	.0047820627	.5127373666	.0066661782
3.6	.0001338558	.0006120187	.5262528733	.0172656004	1.0027666053	.0032073787	.5101798009	.0044842383
3.7	.0001338489	.0004248395	.5194427285	.0168307069	1.0021198644	.0020197566	.5081851427	.0028302724
3.8	.0001338441	.0002919773	.5128002393	.0164095182	1.0016501602	.0011332271	.5066472100	.0015907653
3.9	.0001338409	.0001986713	.5063209075	.0160020800	1.0013123576	.0004784281	.5054752050	.0006724841
4.0	.0001338387	.0001338387	.5000000000	.0156082702	1.0010718573	.0000000000	.5045926026	.0000000001
$\xi_1=-3.9$								
-3.4	.6877868016	4.2662005473	.6431725086	.0706735965	174432.6721049451	24089.6687731340	3327.9344389500	.9998377517
-3.3	.4563353687	3.9569468008	.6656476132	.0664891840	85905.1711902629	12077.0436029799	1697.2801929884	.9997568076
-3.2	.3108646969	3.7307246105	.6859144092	.0622543004	47553.6309066802	6805.8598652921	974.7243474544	.9996552568
-3.1	.2160456632	3.5527946181	.7040638064	.0581119401	28672.9362027258	4183.0551914654	610.8329660509	.9995310200
-3.0	.1526004101	3.4043959645	.7202271617	.0541629214	18447.1551309348	2745.7512565941	409.1946388451	.9993820011
-2.9	.1092884515	3.2747300942	.7345583573	.0504715189	12483.1378428169	1897.3919532218	288.8552063091	.9992060881
-2.8	.0792392415	3.1572972787	.7472199661	.0470727752	8792.6710931995	1365.9929905898	212.6396059808	.9990011254
-2.7	.0581054670	3.0460574222	.7583733707	.0439798780	6395.9365900529	1016.5287058443	161.9603253957	.9987648559
-2.6	.0430634128	2.9444394729	.7681722615	.0411906968	4775.5970365159	777.1846862849	126.8612971895	.9984948373
-2.5	.0322410529	2.8447787480	.7767587892	.0386931007	3642.4728971837	607.5277712792	101.6976599173	.9981883360
-2.4	.0243765807	2.7479840882	.7842616617	.0364690187	2826.9728534165	483.6768926989	83.1123008170	.9978422030
-2.3	.0186076449	2.6533347181	.7907955793	.0344973775	2225.4781040526	390.9396825854	69.0258137472	.9974527351
-2.2	.0143378157	2.5603532103	.7964615326	.0327561218	1772.3935364821	319.9530456548	58.1043301053	.9970155241
-2.1	.0111501940	2.4687244934	.8013476115	.0312235317	1424.8856415295	264.5640725543	49.4658039420	.9965252934
-2.0	.0087505577	2.3782434075	.8055300790	.0298790234	1154.2049550234	220.6185450208	42.5112226155	.9959757198
-1.9	.0069294077	2.2887803122	.8090745478	.0287035882	940.5745508191	185.2433244025	36.8241056248	.9953592358
-1.8	.0055363201	2.2002582953	.8120371547	.0276799852	770.0835925961	156.4077582698	32.1087546896	.9946668067
-1.7	.0044624264	2.1126379423	.8144656746	.0267927755	632.7463594649	132.6480495485	28.1512363965	.9938876729
-1.6	.0036283312	2.0259070868	.8164005411	.0260282575	521.2591339072	112.8896810063	24.7941030426	.9930090486
-1.5	.0029757060	1.9400738792	.8178757612	.0253743460	430.1862276266	96.3304411261	21.9196416069	.9920157636
-1.4	.0024613927	1.8551620829	.8189197240	.0248204219	355.4162922529	82.3618204759	19.4385469009	.9908898346
-1.3	.0020532358	1.7712078757	.8195559077	.0243571714	293.7925745264	70.5152406501	17.2821219124	.9896099487
-1.2	.0017271149	1.6882576758	.8198034959	.0239764239	242.8573098438	60.4246760400	15.3968185883	.9881508403
-1.1	.0014648168	1.6063666615	.8196779126	.0236709963	200.6723310694	51.8002927081	13.7403605143	.9864825382
-1.0	.0012525000	1.5255977612	.8191912893	.0234345465	165.6913766391	44.4096120074	12.2789529243	.9845694558
-0.9	.0010795787	1.4460209549	.8183528746	.0232614357	136.6679689358	38.0638886171	10.9852515900	.9823692953
-0.8	.0009379066	1.3677127733	.8171693978	.0231466021	112.5880826381	32.6081490795	9.8368687060	.9798317293
-0.7	.0008211769	1.2907559096	.8156453960	.0230854426	92.6202948240	27.9138298085	8.8152634816	.9768968246
-0.6	.0007244779	1.2152388792	.8137835147	.0230737036	76.0783993367	23.8732801540	7.9049113881	.9734931686
-0.5	.0006439620	1.1412556749	.8115847903	.0231073794	62.3930017533	20.3956159687	7.0926772062	.9695356623
-0.4	.0005765982	1.0689053699	.8090489224	.0231826164	51.0896519892	17.4035592694	6.3673384054	.9649229556
-0.3	.0005199854	.9982916313	.8061745428	.0232956242	41.7717860160	14.8310034727	5.7192202361	.9595345211
-0.2	.0004722110	.9295221051	.8029594881	.0234425926	34.1072437247	12.6211164395	5.1399143747	.9532274036
-0.1	.0004317433	.8627076401	.7994010798	.0236196152	27.8174767458	10.7248450344	4.6220604131	.9458327552
0.0	.0003973492	.7979613188	.7954964180	.0238226202	22.6688045568	9.0997216770	4.1591748509	.9371523768
0.1	.0003680306	.7353972692	.7912426903	.0240473108	18.4652507391	7.7088998269	3.7455161528	.9269556597
0.2	.0003429756	.6751292362	.7866374974	.0242891166	15.0426150622	6.5203645255	3.3759773020	.9149775659
0.3	.0003215201	.6172688999	.7816791953	.0245431594	12.2635258533	5.5062780943	3.0459993971	.9009186132
0.4	.0003031179	.5619239391	.7763672509	.0248042357	10.0132810275	4.6424313181	2.7515014203	.8844482240
0.5	.0002873175	.5091958522	.7707026058	.0250668202	8.1963323755	3.9077779571	2.4888224862	.8652132011
0.6	.0002737437	.4591775670	.7646880393	.0253250933	6.7333012779	3.2840359586	2.2546737688	.8428533632
0.7	.0002620825	.4119508881	.7583285205	.0255729955	5.5584385277	2.7553428230	2.0460979760	.8170262792
0.8	.0002520700	.3675838567	.7516315347	.0258043097	4.6174589665	2.3079555864	1.8604347487	.7874422327
0.9	.0002434826	.3261281177	.7446073677	.0260127742	3.8656949950	1.9299881087	1.6952907478	.7539086822
1.0	.0002361301	.2876164128	.7372693301	.0261922221	3.2665230426	1.6111800010	1.5485134851	.7163804139
1.1	.0002298493	.2520603327	.7296339033	.0263367452	2.7900246943	1.3426927395	1.4181681769	.6750077343
1.2	.0002244993	.2194484731	.7217207895	.0264408741	2.4118500698	1.1169294142	1.3025170678	.6301716529
1.3	.0002199581	.1897451396	.7135528497	.0264997666	2.1122557068	.9273752268	1.2000008003	.5824940270
1.4	.0002161189	.1628897305	.7051559223	.0265093916	1.8752929556	.7684863498	1.1092215062	.5328138456
1.5	.0002128882	.1387969040	.6965585156	.0264666958	1.6881260016	.6354151300	1.0289273653	.4821284540
1.6	.0002101835	.1173575921	.6877913803	.0263697396	1.5404612509	.5241999030	.9579984374	.4315082930
1.7	.0002079321	.0984408752	.6788869744	.0262177891	1.4240720777	.4313679031	.8954336157	.3820015672
1.8	.0002060695	.0818966707	.6698788419	.0260113563	1.3324049028	.3539999226	.8403385834	.3345475887
1.9	.0002045390	.0675591299	.6608009326	.0257521793	1.2602543290	.2896255169	.7919146822	.2899135577
2.0	.0002032901	.0552505819	.6516868997	.0254431428	1.2034966148	.2361576635	.7494486265	.2486615709
2.1	.0002022788	.0447858228	.6425694093	.0250881442	1.1588721742	.1918358869	.7123030118	.2111444627
2.2	.0002014662	.0359765209	.6334794992	.0246919130	1.1238090387	.1551769459	.6799075881	.1775235589
2.3	.0002008187	.0286355053	.6244460183	.0242597974	1.0962803488	.1249322613	.6517512796	.1477994575
2.4	.0002003071	.0225807226	.6154951721	.0237975355	1.0746899394	.1000513327	.6273749457	.1218478025
2.5	.0001999064	.0176386791	.6066501918	.0233110243	1.0577809761	.0796504609	.6063648895	.0994542609

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-3.9$ (Continued)								
2.6	.0001995954	.0136472380	.5979311319	.0228061046	1.0445633828	.0629861482	.5883471213	.0803453664
2.7	.0001993562	.0104576943	.5893547973	.0222883724	1.0342564875	.0494326083	.5729823869	.0642138581
2.8	.0001991740	.0079361111	.5809347855	.0217630263	1.0262439078	.0384628596	.5599619595	.0507384285
2.9	.0001990364	.0059639469	.5726816308	.0212347551	1.0200382141	.0296329227	.5490041825	.0395984733
3.0	.0001989336	.0044380528	.5646030262	.0207076671	1.0152533436	.0225686807	.5398517257	.0304846849
3.1	.0001988575	.0032701405	.5567041024	.0201852569	1.0115831160	.0169549938	.5322694924	.0231063348
3.2	.0001988016	.0023858424	.5489877407	.0196704066	1.0087845141	.0125267003	.5260430880	.0171959758
3.3	.0001987611	.0017234850	.5414548995	.0191654129	1.0066646591	.0090611657	.5209777347	.0125121540
3.4	.0001987320	.0012326938	.5341049367	.0186720345	1.0050706320	.0063720838	.5168975098	.0088405844
3.5	.0001987113	.0008729277	.5269359167	.0181915508	1.0038814753	.0043042739	.5136447084	.0059941454
3.6	.0001986966	.0006120287	.5199448891	.0177248286	1.0030018633	.0027292584	.5110793891	.0038119712
3.7	.0001986864	.0004248465	.5131281368	.0172723882	1.0023570485	.0015414519	.5090786787	.0021578752
3.8	.0001986794	.0002919821	.5064813893	.0168344680	1.0018887928	.0006548319	.5075360730	.0009183044
3.9	.0001986746	.0001986746	.5000000000	.0164110838	1.0015520669	.0000000000	.5063605001	.0000000001
$\xi_1=-3.8$								
-3.3	.7102016558	4.1903894328	.6396244461	.0712474924	163804.7180163214	23258.6675951447	3303.6355646045	.9998286156
-3.2	.4748726819	3.8778910076	.6616361239	.0672258562	80377.4993643733	11617.5983264990	1680.0474217065	.9997429293
-3.1	.3261047082	3.6490367978	.6815255863	.0631398162	44316.7569321832	6526.1360171520	961.7476558067	.9996352613
-3.0	.2285209413	3.4690215292	.6993742652	.0591264854	26607.4876094999	3995.6396271694	600.6207164870	.9995032796
-2.9	.1627837087	3.3190118394	.7153020769	.0552842321	17041.6042984969	2612.0384164081	400.8834386215	.9993445862
-2.8	.1175886131	3.1881376092	.7294510040	.0516774387	11478.3021248677	1797.3351440994	281.9118023827	.9991567147
-2.7	.0860026838	3.0698331875	.7419722694	.0483429199	8046.1869871290	1288.3143936014	206.7175319858	.9989370998
-2.6	.0636210735	2.9600006306	.7530170358	.0452965428	5824.3632170736	954.4645482639	156.8251906242	.9986830173
-2.5	.0475691434	2.8560199332	.7627301617	.0425392007	4327.3454797770	726.4608858374	122.3492060429	.9983914972
-2.4	.0359310985	2.7561861490	.7712463925	.0400617569	3284.1838732164	565.3232372744	97.6907840915	.9980592119
-2.3	.0274083223	2.6593757728	.7786883663	.0378488854	2536.2317717407	448.0593690866	79.5238897165	.9976823438
-2.2	.0211080057	2.5648425799	.7851658911	.0358819024	1986.7138107374	360.5425589316	65.7906336187	.9972564339
-2.1	.0164088206	2.4720895182	.7907760602	.0341407548	1574.4662945578	293.7819891559	55.1723693427	.9967762135
-2.0	.0128736973	2.3807867092	.7956038823	.0326053509	1259.6142191517	241.8769372934	46.7980128294	.9962354177
-1.9	.0101921787	2.2907181142	.7997231918	.0312563976	1015.4374275607	200.8483613386	40.0765618234	.9956265776
-1.8	.0081417581	2.2017463885	.8031976848	.0300758860	823.5852701110	167.9475364571	34.5974615632	.9949407866
-1.7	.0065616203	2.1137894701	.8060819763	.0290473313	671.1719930969	141.2339617209	30.0694436279	.9941674331
-1.6	.0053346105	2.0268048473	.8084226196	.0281558507	548.9641227806	119.3103915356	26.2819177385	.9932938898
-1.5	.0043747294	1.9407789095	.8102590522	.0273881368	450.2209617517	101.1523177060	23.0799825523	.9923051480
-1.4	.0036183853	1.8557196985	.8116244528	.0267323679	369.9362266445	85.9957652200	20.3478835232	.9911833832
-1.3	.0030182213	1.7716519533	.8125465072	.0261780832	304.3320322522	73.2619703789	17.9978385673	.9899074340
-1.2	.0025387280	1.6886137112	.8130480834	.0257160411	250.5150792805	62.5059016394	15.9623508597	.9884521756
-1.1	.0021531008	1.6066539692	.8131478265	.0253380722	206.2391519792	53.3805018935	14.1888330813	.9867877643
-1.0	.0018409735	1.5258310671	.8128606808	.0250369340	169.7385267706	45.6114847024	12.6357922568	.9848787258
-0.9	.0015867735	1.4462115571	.8121983505	.0248061708	139.6094365120	38.9793311870	11.2700860671	.9826828568
-0.8	.0013785188	1.3678693929	.8111697087	.0246399815	114.7245731459	33.3062719278	10.0649261424	.9801499049
-0.7	.0012069344	1.2908853190	.8097811662	.0245330944	94.1706039693	28.4467655260	8.9984093696	.9772199887
-0.6	.0010647972	1.2153463689	.8080370088	.0244806501	77.2019132335	24.2804588448	8.0524271161	.9738217199
-0.5	.0009464501	1.1413454010	.8059397119	.0244780921	63.2059131496	20.7069272667	7.2118479783	.9698699896
-0.4	.0008474366	1.0689806161	.8034902413	.0245210639	51.6766940892	17.6417039107	6.4639004716	.9652633950
-0.3	.0007642265	.9983550063	.8006883486	.0246053124	42.1947497609	15.0132503747	5.7977031651	.9598813009
-0.2	.0006940080	.9295765925	.7975328654	.0247265991	34.4111754567	12.7606208021	5.2039043928	.9535805730
-0.1	.0006345295	.8627531132	.7940220044	.0248806170	28.0351963290	10.8316404569	4.6744039551	.9461920929
0.0	.0005839784	.7980000283	.7901536711	.0250629173	22.8242034957	9.1814609270	4.2021365397	.9375172735
0.1	.0005408874	.7354303113	.7859257887	.0252688449	18.5757018692	7.7714538529	3.7809018523	.9273249708
0.2	.0005040630	.6751575052	.7813366394	.0254934870	15.1237340399	6.5682034392	3.4052302720	.9153494307
0.3	.0004725291	.6172931293	.7763852195	.0257316358	12.3184590538	5.5428298240	3.0702756455	.9012902420
0.4	.0004454829	.5619447335	.7710716070	.0259777700	10.0516470948	4.6703216549	2.7717289071	.8848156602
0.5	.0004222608	.5092131131	.7653973367	.0262260579	8.2229103343	3.9290195344	2.5057477505	.8655710772
0.6	.0004023111	.4591929125	.7593657724	.0264703850	6.7515331411	3.3001723349	2.2688987324	.8431946866
0.7	.0003851725	.4119640688	.7529824675	.0267044103	5.5707961281	2.7675584431	2.0581090529	.8173423021
0.8	.0003704571	.3675951685	.7462554975	.0269216512	4.6257114312	2.3171597768	1.8706259160	.7877224798
0.9	.0003578362	.3261378119	.7391957499	.0271155998	3.8711035482	1.9368792918	1.7039818641	.7541412173
1.0	.0003470302	.2876247041	.7318171513	.0272798663	3.2699826884	1.6162948223	1.5559648642	.7165524117
1.1	.0003377993	.2520674056	.7241368150	.0274083474	2.7921671022	1.3464436797	1.4245922013	.6751063732
1.2	.0003299365	.2194544876	.7161750898	.0274954115	2.4131181548	1.1196336042	1.3080874619	.6301852584
1.3	.0003232623	.1897502348	.7079554956	.0275360907	2.1129575795	.9292765369	1.2048600473	.5824132961
1.4	.0003176198	.1628940282	.6995045368	.0275262691	1.8756408602	.7697423337	1.1134867903	.5326329078
1.5	.0003128716	.1388005113	.6908513887	.0274628514	1.6882643445	.6362300292	1.0326953421	.4818455251
1.6	.0003088966	.1173606034	.6820274617	.0273439000	1.5404867170	.5246546338	.9613490690	.4311257660
1.7	.0003055877	.0984433741	.6730658570	.0271687275	1.4240480174	.4315477303	.8984332601	.3815255346
1.8	.0003028503	.0818987311	.6640007356	.0269379326	1.3323715834	.3539703595	.8430424865	.3339869403
1.9	.0003006009	.0675608169	.6548666288	.0266533773	1.2602362041	.2894368635	.7943689921	.2892788789
2.0	.0002987655	.0552519531	.6456977263	.0263181014	1.2035074536	.2358484999	.7516920225	.2479640697
2.1	.0002972792	.0447869288	.6365271780	.0259361810	1.1589186574	.1914357637	.7143680259	.2103950869
2.2	.0002960849	.0359774057	.6273864465	.0255125397	1.1238932616	.1547084573	.6818216756	.1767323776
2.3	.0002951333	.0286362074	.6183047420	.0250527278	1.0964015472	.1244126435	.6535376891	.1469753081
2.4	.0002943814	.0225812748	.6093085656	.0245626843	1.0748456666	.0994936978	.6290534259	.1209981559
2.5	.0002937925	.0176391096	.6004213782	.0240484997	1.0579678941	.0790647486	.6079522638	.0985852428
2.6	.0002933354	.0136475705	.5916634008	.0235161940	1.0447777640	.0623798620	.5898577555	.0794618732
2.7	.0002929839	.0104579489	.5830515439	.0229715236	1.0344946287	.0488113835	.5744285694	.0633197194
2.8	.0002927160	.0079363041	.5745994564	.0224198256	1.0265022162	.0378309026	.5613542123	.0498365839
2.9	.0002925139	.0059640918	.5663176749	.0218659036	1.0203134052	.0289933511	.5503515152	.0386911409
3.0	.0002923627	.0044381606	.5582138533	.0213139566	1.0155424805	.0219237851	.5411618443	.0295735122
3.1	.0002922509	.0032702199	.5502930480	.0207675467	1.0118836295	.0163064407	.5335489733	.0221925265
3.2	.0002921688	.0023859003	.5425580384	.0202296019	1.0090241975	.0118756877	.5272975232	.0162803992
3.3	.0002921093	.0017235268	.5350096595	.0197024459	1.0069816478	.0084085427	.5222118557	.0115954230
3.4	.0002920665	.0012327237	.5276471309	.0191878473	1.0053913735	.0057184426	.5181152864	.0079231260
3.5	.0002920360	.0008729489	.5204683681	.0186870821	1.0042386953	.0036500190	.5148494795	.0050762500
3.6	.0002920145	.0006120436	.5134702663	.0182010023	1.0033325299	.0020746593	.5122738934	.0028938315
3.7	.0002919995	.0004248568	.5066489524	.0177301051	1.0026903371	.0008866826	.5102651678	.0012396150
3.8	.0002919892	.0002919892	.5000000000	.0172745998	1.0022240532	.0000000000	.5087163723	.0000000001

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

$\xi_1 = -3.7$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-3.2	.7332163964	4.1151924441	.6360479047	.0718126693	153609.1611212096	22442.6966399399	3280.1255690517	.9998186777
-3.1	.4940434420	3.7994950395	.6575806708	.0679545101	75102.1242353640	11173.9848646144	1663.4141102687	.9997278201
-3.0	.3419860338	3.5680335594	.6770749633	.0640198276	41244.5311487151	6254.7046490525	949.2553170746	.9996134755
-2.9	.2416251379	3.3859422543	.6946036045	.0601396857	24658.1992679269	3814.8581434834	590.8173840842	.9994730348
-2.8	.1735688146	3.2343205257	.7102758765	.0564096552	15722.7457478548	2483.8119100821	392.9289973678	.9993037674
-2.7	.1264537835	3.1022312624	.7242225211	.0528938056	10540.9081325798	1701.9314891509	275.2870322316	.9991028150
-2.6	.0932888310	2.9830465508	.7365838911	.0496303125	7353.8292868063	1214.6596394590	201.0852391110	.9988671559
-2.5	.0696148193	2.8726133391	.7475012335	.0466373712	5297.2688324765	895.9324397003	151.9571025745	.9985935414
-2.4	.0525085442	2.7682645967	.7571107288	.0439186283	3916.3086589393	678.8730788818	118.0855916839	.9982784025
-2.3	.0400120436	2.6682563878	.7655397542	.0414677540	2957.4606596147	525.9272251820	93.9167059051	.9979177310
-2.2	.0307908898	2.5714336443	.7729048303	.0392720530	2272.5427432933	414.9732427019	76.1546244337	.9975069355
-2.1	.0239223597	2.4770251279	.7793107699	.0373151744	1771.3115862127	337.4375476143	62.7623829486	.9970406748
-2.0	.0187604469	2.3845143690	.7848506341	.0355790535	1396.8265959783	269.6928670356	52.4361474753	.9965126688
-1.9	.0148479091	2.2935567492	.7896061999	.0340452413	1112.0281634640	221.0844839266	44.3155121680	.9959154836
-1.8	.0118579117	2.2039253427	.7936487205	.0326957677	892.1247996699	182.8041132789	37.8172910675	.9952402906
-1.7	.0095547143	2.1154750605	.7970398269	.0315136639	720.1198150433	152.2242576049	32.5367253181	.9944765884
-1.6	.0077668437	2.0281186468	.7998324747	.0304832437	584.0994840766	127.4922517860	28.1868929766	.9936118840
-1.5	.0063685769	1.9418104613	.8020718707	.0295902210	475.5428367892	107.2757031986	24.5604969320	.9926313177
-1.4	.0052670338	1.8565354372	.8037963463	.0288217175	388.2417727833	90.5988510767	21.5051559245	.9915172212
-1.3	.0043930962	1.7723015170	.8050381580	.0281662034	317.5955934200	76.7350028500	18.9070639723	.9902485901
-1.2	.0036949666	1.6891344422	.8058242097	.0276133965	260.1407860292	65.1344007146	16.6799629882	.9888004520
-1.1	.0031335624	1.6070741472	.8061766982	.0271541393	213.2318425915	55.3749672031	14.7575638337	.9871431061
-1.0	.0026791996	1.5261722476	.8061136859	.0267802664	174.8209527453	47.1281199864	13.0882509105	.9852412079
-0.9	.0023091867	1.4464902741	.8056496117	.0264844697	143.3035763100	40.1346916365	11.6313268846	.9830526664
-0.8	.0020060689	1.3680984074	.8047957453	.0262601657	117.4986185483	34.1877364316	10.3543137050	.9805273200
-0.7	.0017563365	1.2910745395	.8035605990	.0261013671	96.1192455737	29.1201004749	9.2309892330	.9776053513
-0.6	.0015494712	1.2155035340	.8019503023	.0260025609	78.6150304642	24.7953302316	8.2399433113	.9742154019
-0.5	.0013772351	1.1414765901	.7999689516	.0259585924	64.2291333419	21.1009489771	7.3635052692	.9702723499
-0.4	.0012331399	1.0690906319	.7976189418	.0259645557	52.4162008812	17.9434310320	6.5869400466	.9656747246
-0.3	.0011120462	.9984476637	.7949012890	.0260156915	42.7279942093	15.2444053241	5.8978405594	.9603017504
-0.2	.0010098608	.9296540389	.7918159491	.0261072909	34.7946496818	12.9377571505	5.2856647318	.9540100604
-0.1	.0009233062	.8628195953	.7883621419	.0262346075	28.3100902239	10.9673917694	4.7413800343	.9466301821
0.0	.0008497437	.7980566214	.7845386817	.0263927788	23.0205293018	9.2854896142	4.2571884860	.9379630208
0.1	.0007870382	.7354786183	.7803443210	.0265767576	18.7153060365	7.8511296186	3.8263122673	.9277767304
0.2	.0007334522	.6751988337	.7757781073	.0267812564	15.2194987634	6.6291904118	3.4428252503	.9158046176
0.3	.0006875652	.6173285517	.7708397534	.0270007086	12.3879124564	5.5894630499	3.1015195018	.9017450512
0.4	.0006482088	.5619751340	.7655300182	.0272292479	10.1001411811	4.7059262515	2.7977985547	.8852647548
0.5	.0006144173	.5092398249	.7598510934	.0274607108	8.2564826730	3.9561476989	2.5275912669	.8660072687
0.6	.0005853878	.4592153467	.7538069863	.0276886651	6.7745369677	3.3207841894	2.2872815928	.8436086549
0.7	.0005604490	.4119833382	.7474038888	.0279064674	5.5863608202	2.7831601929	2.0736507162	.8177224281
0.8	.0005390361	.3676117056	.7406505179	.0281073510	4.6360787324	2.3289093726	1.8838288399	.7880548871
0.9	.0005206712	.3261519841	.7335584102	.0282845453	3.8778727995	1.9456673145	1.7152545666	.7544101300
1.0	.0005049472	.2876368252	.7261421536	.0284314239	3.2742894550	1.6228064555	1.5656402881	.7167409166
1.1	.0004915152	.2520777458	.7184195353	.0285416772	2.7948130831	1.3512062267	1.4329423687	.6751976035
1.2	.0004800740	.2194632804	.7104115905	.0286095021	2.4146654891	1.1230529487	1.3153351888	.6301639076
1.3	.0004703623	.1897576836	.7021425357	.0286297992	2.1137971660	.9316651373	1.2111883271	.5822672326
1.4	.0004621519	.1629003112	.6936395766	.0285983640	1.8760417326	.7713407303	1.1190463225	.5323545680
1.5	.0004552428	.1388057849	.6849325881	.0285120581	1.6884092579	.6372233777	1.0376105840	.4814327622
1.6	.0004494587	.1173650058	.6760536704	.0283689480	1.5404977180	.5251854215	.9657231094	.4305819502
1.7	.0004446440	.0984470273	.6670365957	.0281683952	1.4240047515	.4317255619	.9023517498	.3808589027
1.8	.0004406609	.0819017431	.6579161669	.0279110912	1.3323243486	.3538794919	.8465768142	.3332093870
1.9	.0004373877	.0675632831	.6487275187	.0275990288	1.2602152153	.2891420097	.7975788546	.2884044919
2.0	.0004347170	.0552539577	.6395053964	.0272354104	1.2035293818	.2353993029	.7546275072	.2470077092
2.1	.0004325542	.0447885456	.6302834498	.0268244991	1.1589912148	.1908702459	.7170713002	.2093712234
2.2	.0004308165	.0359786993	.6210935792	.0263714217	1.1240183919	.1540556823	.6843283602	.1756542831
2.3	.0004294318	.0286372337	.6119653664	.0258819385	1.0965776246	.1236947711	.6558779729	.1458545993
2.4	.0004283378	.0225820821	.6029256157	.0253621974	1.0750689936	.0987275706	.6312529745	.1198446257
2.5	.0004274809	.0176397389	.5939980229	.0248184889	1.0582337062	.0782631189	.6100329579	.0974068966
2.6	.0004268157	.0136480566	.5852029776	.0242570177	1.0450809094	.0615523400	.5918382924	.0782650884
2.7	.0004263042	.0104583209	.5765574974	.0236837052	1.0348299097	.0479651708	.5763249539	.0621094662
2.8	.0004259145	.0079365862	.5680752813	.0231040299	1.0268647662	.0369713598	.5631801566	.0486166608
2.9	.0004256203	.0059643036	.5597668662	.0225229120	1.0206987536	.0281244364	.5521187672	.0374644000
3.0	.0004254004	.0044383181	.5516398630	.0219446416	1.0159466427	.0210483936	.5428804578	.0283420594
3.1	.0004252376	.0032703360	.5436992502	.0213728479	1.0123031281	.0154266663	.5352275319	.0209578909
3.2	.0004251182	.0023859849	.5359477005	.0208105034	1.0095260508	.0109930246	.5289433289	.0150436723
3.3	.0004250316	.0017235880	.5283859205	.0202599563	1.0074233393	.0075240401	.5238310896	.0103573693
3.4	.0004249693	.0012327674	.5210129862	.0197229826	1.0058428101	.0048328229	.5197131482	.0066842699
3.5	.0004249249	.0008729799	.5138266590	.0192008516	1.0046641600	.0027637679	.5164303103	.0038369423
3.6	.0004248937	.0006120653	.5068236751	.0186943971	1.0037926328	.0011880935	.5138412863	.0016542995
3.7	.0004248719	.0004248719	.5000000000	.0182040896	1.0031539681	.0000000000	.5118220679	.0000000001

$\xi_1 = -3.6$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-3.1	.7568410632	4.0406193969	.6324433327	.0723686326	143833.5138681700	21641.2217030104	3257.3946694320	.9998078408
-3.0	.5138624083	3.7217733527	.6534817593	.0686743359	70069.8855597363	10740.7824787087	1647.3702087619	.9997113282
-2.9	.3585282952	3.4877342191	.6725629658	.0648931804	38329.8034456385	5991.2123438577	937.2367490563	.9995896756
-2.8	.2553824616	3.3035808690	.6897519907	.0611500632	22819.2532571547	3640.4033525844	581.4122225699	.9994399674
-2.7	.1849839370	3.1503504961	.7051482677	.0575374524	14485.6885596491	2360.7960866562	385.3200255603	.9992591059
-2.6	.1359154007	3.0170434427	.7188719579	.0541187140	9666.7454524178	1610.9287535668	268.9696812461	.9990437974
-2.5	.1011315085	2.8969731645	.7310530400	.0509329878	6711.9096460380	1144.7947655128	195.7313328581	.9987905105
-2.4	.0761220951	2.7859342833	.7418231765	.0480004460	4811.3800248622	840.7132338598	147.3445120708	.9984954057
-2.3	.0579178275	2.6812147566	.7513100545	.0453272088	3539.5544052232	634.2147627157	114.0587993042	.9981542337
-2.2	.0445202882	2.5810330380	.7596337502	.0429095491	2659.6596373458	489.1444343306	90.3637138057	.9977622059
-2.1	.0345603586	2.4842033876	.7669046473	.0407372682	2033.5121397236	384.2334867823	72.9927910793	.9973138362
-2.0	.0270860651	2.3899300911	.7732224837	.0387962721	1577.0987341934	306.4493072550	59.9294022421	.9968027545
-1.9	.0214270498	2.2976775573	.7786761721	.0370704522	1237.5000826738	247.5196403944	49.8841159919	.9962214923
-1.8	.0171059889	2.2070865690	.7833441222	.0355430009	980.3333066322	202.0297257145	42.0069194758	.9955612357
-1.7	.0137796030	2.1179193640	.7872948626	.0341972893	782.6380036091	166.3376870178	35.7222456724	.9948115419
-1.6	.0111987533	2.0300231143	.7905878195	.0330174176	628.7012409772	137.9340981417	30.6309973170	.9939600111
-1.5	.0091810869	1.9433053589	.7932741562	.0319885319	507.5297376842	115.0518166974	26.4505101426	.9929919035
-1.4	.0075920661	1.8577173182	.7953976127	.0310969750	411.2763221368	96.4215891817	22.9767242174	.9918896891
-1.3	.0063316765	1.7732424677	.7969953082	.0303303268	334.2358234416	81.1151149101	20.0597458076	.9906325119
-1.2	.0053250278	1.6898886597	.7980984867	.0296773718	272.1898843328	68.4419990251	17.5877013128	.9891955511
-1.1	.0045156497	1.6076826557	.7987331976	.0291280213	221.9707441557	57.8807181980	15.4758515003	.9875497544
-1.0	.0038606739	1.5266663047	.7989209112	.0286732085	181.1654353483	49.0315265312	13.6591167960	.9856584157

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
ξ_1=-3.6 (Continued)								
-0.9	.0033273439	1.4468938486	.7986790723	.0283047698	147.9117943874	41.5837966643	12.0868592126	.9834810675
-0.8	.0028904707	1.3684299936	.7980215990	.0280153204	120.7555813549	35.2930302486	10.7191847532	.9809671486
-0.7	.0025305642	1.2913484944	.7969593344	.0277981281	98.5489314342	29.9644517539	9.5242875630	.9780569118
-0.6	.0022324528	1.2157310695	.7955004611	.0276469910	80.3771759867	25.4411511754	8.4765188125	.9746790286
-0.5	.0019842566	1.1416665122	.7936508853	.0275561174	65.5054010399	21.5954122515	7.5549668353	.9707483544
-0.4	.0017766199	1.0692498966	.7914146011	.0275200127	53.3389110109	18.3222986660	6.7424025100	.9661633252
-0.3	.0016021333	.9985817964	.7887940415	.0275333710	43.3936054920	15.5348585306	6.0244885767	.9608029811
-0.2	.0014548961	.9297674521	.7857904247	.0275909743	35.2735036283	13.1605004409	5.3891816508	.9545236500
-0.1	.0013301838	.8629158323	.7824041004	.0276875993	28.6534797444	11.1382256580	4.8262762345	.9471553987
0.0	.0012241934	.7981385422	.7786349031	.0278179340	23.2658407859	9.4164914147	4.3270542366	.9384984712
0.1	.0011338473	.7355485437	.7744825145	.0279765047	18.8897680846	7.9515434149	3.8840134728	.9283201080
0.2	.0010566418	.6752586570	.7699468381	.0281576178	15.3429194943	6.7061000472	3.4906556892	.9163523937
0.3	.0009905296	.6173798253	.7650283857	.0283553177	12.4746804747	5.6483024733	3.1413197196	.9022921108
0.4	.0009338270	.5620191382	.7597286722	.0285633651	10.1606892462	4.7508674616	2.8310490590	.8858039907
0.5	.0008851424	.5092776209	.7540506150	.0287752388	8.2983586339	3.9903962524	2.5554858249	.8665291676
0.6	.0008433190	.4592478195	.7479989284	.0289841652	6.8031872831	3.3468046990	2.3107850539	.8441009359
0.7	.0008073892	.4120112298	.7415805022	.0291831768	5.6057035717	2.8028486642	2.0935447534	.8181698291
0.8	.0007765396	.3676356423	.7348047494	.0293652036	4.6489223992	2.3437250873	1.9007482281	.7884392264
0.9	.0007500813	.3261724975	.7276839075	.0295231956	3.8862220145	1.9567338737	1.7297160230	.7547107833
1.0	.0007274279	.2876543699	.7202332735	.0296502750	3.2795679654	1.6309892713	1.5780654525	.7169358215
1.1	.0007080765	.2520927124	.7124713541	.0297399142	2.7980260902	1.3571720073	1.4436761531	.6752648165
1.2	.0006915934	.2194760073	.7044199138	.0297861300	2.4165176364	1.1273153957	1.3246604598	.6300835873
1.3	.0006776019	.1897684652	.6961039054	.0297836849	2.1147781125	.9346200773	1.2193376763	.5820237491
1.4	.0006657735	.1629094052	.6875512737	.0297282821	1.8764880659	.7732931411	1.1262115223	.5319383130
1.5	.0006558198	.1388134180	.6787926278	.0296167397	1.6885491650	.6384081912	1.0439501961	.4808412366
1.6	.0006474868	.1173713778	.6698607902	.0294471293	1.5404831113	.5257835459	.9713686192	.4298198673
1.7	.0006405503	.0984523150	.6607902331	.0292188659	1.4239342889	.4318762274	.9074125208	.3799373079
1.8	.0006348119	.0819061027	.6516164276	.0289327390	1.3322598589	.3536897684	.8511440956	.3321440523
1.9	.0006300964	.0675668528	.6423751352	.0285908794	1.2601933607	.2886941488	.8017290277	.2872139859
2.0	.0006262488	.0552568592	.6331016767	.0281966608	1.2035698903	.2347564025	.7584247205	.2457115368
2.1	.0006231330	.0447908858	.6238302188	.0277545420	1.1591026534	.1900806242	.7205696091	.2079883114
2.2	.0006206296	.0359805717	.6145931134	.0272698618	1.1242021811	.1531562563	.6875734673	.1742019353
2.3	.0006186347	.0286387192	.6054203247	.0267485991	1.0968308033	.1227136669	.6589086445	.1443479139
2.4	.0006170585	.0225832505	.5963389680	.0261971187	1.0753860990	.0976861426	.6341021937	.1182962898
2.5	.0006158240	.0176406498	.5873729794	.0256219179	1.0586080316	.0771775109	.6127288648	.0958272457
2.6	.0006148658	.0136487603	.5785429202	.0250293919	1.0455053275	.0604346935	.5944049498	.0766623257
2.7	.0006141288	.0104588595	.5698659158	.0244256311	1.0352973948	.0468245605	.5787829724	.0604899572
2.8	.0006135673	.0079369945	.5613557145	.0238162583	1.0273687090	.0358145177	.5655472054	.0469852466
2.9	.0006131435	.0059646103	.5530228513	.0232063118	1.0212331364	.0269563121	.5544099925	.0358246951
3.0	.0006128267	.0044385462	.5448748910	.0226001733	1.0165061202	.0198725109	.5451088282	.0266967140
3.1	.0006125921	.0032705040	.5369167296	.0220015380	1.0128830458	.0142457637	.5374041248	.0193088135
3.2	.0006124202	.0023861074	.5291509283	.0214134212	1.0101224250	.0098088541	.5310775720	.0133922112
3.3	.0006122953	.0017236765	.5215780607	.0208381930	1.0080328121	.0063378709	.5259309666	.0087044569
3.4	.0006122056	.0012328307	.5141970536	.0202776337	1.0064625911	.0036455154	.5217853772	.0050305349
3.5	.0006121417	.0008730247	.5070055094	.0197330021	1.0052919617	.0015758884	.5184805025	.0021827960
3.6	.0006120967	.0006120967	.5000000000	.0192051109	1.0044266048	.0000000000	.5158740871	.0000000000
ξ_1=-3.5								
-3.0	.7810856043	3.9666800027	.6288112032	.0729148876	134465.8373702226	20853.7279653805	3235.4348952222	.9997959925
-2.9	.5343443095	3.6447403434	.6493399435	.0693845135	65272.0094563074	10317.5782559278	1631.9057588667	.9996932782
-2.8	.3757512271	3.4081581563	.6679901011	.0657586906	35565.7739343304	5735.3173224125	925.6819019920	.9995636015
-2.7	.2698174652	3.2219616966	.6848197107	.0621560775	21085.1398328510	3471.9789787166	572.3942272821	.9994037074
-2.6	.1970579382	3.0671307311	.6999191191	.0586657787	13425.4238456137	2242.7266211888	378.0462953625	.9992100900
-2.5	.1460059232	2.9326070609	.7133985623	.0553500984	8851.8672327706	1524.0864352336	262.9499538916	.9989789700
-2.4	.1095659638	2.8116499963	.7253781532	.0522487621	6116.9872098736	1078.4976697276	190.6449556959	.9987062449
-2.3	.0831801249	2.7000037360	.7359803240	.0493835722	4363.6578731132	788.5998366657	142.9764412978	.9983874075
-2.2	.0638354389	2.5949136123	.7453244820	.0467628350	3194.3731425205	592.2915634476	110.2577658843	.9980174345
-2.1	.0494948398	2.4945619406	.7535234994	.0443852084	2368.3487025729	454.7917185265	87.0207111989	.9975906414
-2.0	.0387557493	2.3977333023	.7606816313	.0422428385	1816.9471673866	355.6671836972	70.0273060388	.9971005063
-1.9	.0306377200	2.3036081425	.7668934860	.0403237927	1402.0928711559	282.4144683003	57.2806719063	.9965394591
-1.8	.0244464752	2.2116321315	.7722437316	.0386138679	1094.6922463469	227.1080425867	47.5053706961	.9958986359
-1.7	.0196847939	2.1214316697	.7768072912	.0370978796	862.2048809433	184.5671829341	39.8614258649	.9951675920
-1.6	.0159929644	2.0327582695	.7806498395	.0357605429	685.5069459345	151.3121523216	33.7808991866	.9943339690
-1.5	.0131083485	1.9454514149	.7838284668	.0345870441	548.0012160761	124.9484788144	28.8700067579	.9933831046
-1.4	.0108375437	1.8594134614	.7863924201	.0335633831	440.2647386928	103.7922412286	24.8503183937	.9922975744
-1.3	.0090369895	1.7745924992	.7883838592	.0326765553	355.0867191911	86.6356051504	21.5209500276	.9910566480
-1.2	.0075993137	1.6909705532	.7898385915	.0319146193	287.2358897751	72.5964256244	18.7344572823	.9896356420
-1.1	.0064436283	1.6085553916	.7907867653	.0312666892	232.8536887191	61.0195981704	16.3808771042	.9880051452
-1.0	.0055085736	1.5273747973	.7912535105	.0307228779	189.0500096926	51.4110381180	14.3769784876	.9861300884
-0.9	.0047472914	1.4474725234	.7912595261	.0302742095	153.6296296854	43.3926850921	12.6588881362	.9839686274
-0.8	.0041237656	1.3689054039	.7908216154	.0299125135	124.9036913147	36.6713259684	11.1769468305	.9814708024
-0.7	.0036101394	1.2917412474	.7899531757	.0296303104	101.5577719248	31.0166643068	9.8920673739	.9785769338
-0.6	.0031847352	1.2160572536	.7886646488	.0294206936	82.5581876835	26.2456787650	8.7731203309	.9752157138
-0.5	.0028305832	1.1419387618	.7869639405	.0292772108	67.0845187676	22.2113229057	7.7959340817	.9713019538
-0.4	.0025343220	1.0694781898	.7848568168	.0291937494	54.4803644623	18.7942626650	6.9373983192	.9667339592
-0.3	.0022853715	.9987740579	.7823472855	.0291644253	44.2169351030	15.8967655494	6.1834268605	.9613905236
-0.2	.0020753075	.9299300103	.7794379688	.0291834781	35.8657928166	13.4381312294	5.5191799205	.9551275757
-0.1	.0018973857	.8630537678	.7761304759	.0292451741	29.0781884519	11.3512377831	4.9329757422	.9477745833
0.0	.0017461778	.7982559559	.7724257777	.0293437185	23.5692083540	9.5799032333	4.4149415315	.9391309345
0.1	.0016172914	.7356487631	.7683245912	.0294731792	19.1054680467	8.0768483096	3.9566681549	.9289626905
0.2	.0015071535	.6753443962	.7638277722	.0296274254	15.4954512906	6.8021064589	3.5529472485	.9170003589
0.3	.0014128422	.6174533102	.7589367190	.0298000832	12.5818450385	5.7217694371	3.1915368444	.9029386773
0.4	.0013319554	.5620822038	.7536537825	.0299845124	10.2353980284	4.8069868769	2.8730460476	.8864398111
0.5	.0012625073	.5093317886	.7479826797	.0301738085	8.3499564758	4.0331598014	2.5907553777	.8671417966
0.6	.0012028471	.4592943577	.7419288999	.0303608322	6.8384200574	3.3792836248	2.3405336092	.8446743685
0.7	.0011515946	.4120512023	.7355000934	.0305382704	5.6294259120	2.8274075140	2.1187506810	.8186842320
0.8	.0011075891	.3676699466	.7287064285	.0306987301	4.6646151005	2.3621852756	1.9222967148	.7888710273
0.9	.0010698479	.3262018958	.7215608982	.0308348645	3.8963699822	1.9704990252	1.7480749432	.7550332998
1.0	.0010375343	.2876795134	.7140795602	.0309395305	3.2859362062	1.6411413939	1.5938539813	.7171205753
1.1	.0010099310	.2521141613	.7062816891	.0310059702	2.8018598613	1.3645453628	1.4573275998	.6752835629
1.2	.0009864191	.2194942463	.6981898260	.0310280112	2.4186898117	1.1325532933	1.3365305468	.6299108877
1.3	.0009664615	.1897839164	.6898296969	.0310002718	2.1158944783	.9382185738	1.2297192020	.5816397063
1.4	.0009495893	.1629224379	.6812300309	.0309183599	1.8769643436	.7756346931	1.1353461457	.5313308959
1.5	.0009353912	.1388243570	.6724222068	.0307790491	1.6886664791	.6397875830	1.0520379287	.4800076590

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-3.5$ (Continued)								
1.6	.0009235049	.1173805096	.6634398030	.0305804184	1.5404279083	.5264278802	.9785754836	.4287666788
1.7	.0009136107	.0984598927	.6543180227	.0303219404	1.4238269569	.4319603462	.9138767410	.3786792105
1.8	.0009054256	.0819123504	.6450930331	.0300045090	1.3321751554	.3533481546	.8569811101	.3307017842
1.9	.0008986993	.0675719685	.6358012465	.0296304008	1.2601749201	.2880301152	.8070355551	.2856118010
2.0	.0008932112	.0552610173	.6264785807	.0292031692	1.2036404651	.2338491907	.7632820607	.2439747905
2.1	.0008887668	.0447942396	.6171597370	.0287274784	1.1592712917	.1889908904	.7250463287	.2061415094
2.2	.0008851959	.0359832549	.6078775335	.0282088883	1.1244692153	.1519303127	.6917275847	.1722674001
2.3	.0008823504	.0286408480	.5986623280	.0276536055	1.0971912803	.1213867629	.6627894106	.1423450521
2.4	.0008801021	.0225849249	.5895415555	.0270682196	1.0758321083	.0962850032	.6377515430	.1162413485
2.5	.0008783412	.0176419552	.5805393977	.0264594416	1.0591302580	.0757223027	.6161825989	.0937334085
2.6	.0008769744	.0136497687	.5716765911	.0258338631	1.0460940628	.0589405466	.5976937030	.0745400107
2.7	.0008759233	.0104596313	.5629703697	.0251977476	1.0359431744	.0453027478	.5819329998	.0583472088
2.8	.0008751223	.0079375796	.5544345306	.0245568650	1.0280626921	.0342733679	.5685810280	.0448281485
2.9	.0008745178	.0059650497	.5460796044	.0239163728	1.0219673114	.0254019171	.5573469259	.0336577584
3.0	.0008740659	.0044388730	.5379131066	.0232807442	1.0172733940	.0183093494	.5479654189	.0245232200
3.1	.0008737314	.0032707447	.5299398465	.0226537393	1.0136772573	.0126768171	.5401945132	.0171311016
3.2	.0008734861	.0023862830	.5221622691	.0220384140	1.0100383101	.0082363909	.5338137972	.0112119132
3.3	.0008733080	.0017238033	.5145808095	.0214371572	1.0088659397	.0047633898	.5286232279	.0065226831
3.4	.0008731800	.0012329214	.5071942404	.0208517498	1.0073092826	.0020700124	.5244422607	.0028480178
3.5	.0008730889	.0008730889	.5000000000	.0202834363	1.0061492040	.0000000000	.5211091814	.0000000001
$\xi_1=-3.4$								
-2.9	.8059598639	3.8933838569	.6251520140	.0734509406	125494.5385813346	20079.6906234526	3214.2356258444	.9997830024
-2.8	.5555038216	3.5684103253	.6451558272	.0700842149	60700.1128812061	9903.9727141120	1617.0112520605	.9996734658
-2.7	.3936746438	3.3293247716	.6633569604	.0666151463	32945.9713229203	5486.6877515082	914.5810642517	.9995349500
-2.6	.2849550033	3.1411092614	.6798071773	.0631561284	19450.6419835149	3309.2990857033	563.7555776356	.9993638218
-2.5	.2098202875	2.9846906645	.6945884700	.0597926847	12238.8115869537	2129.3501499698	371.0976558617	.9991561195
-2.4	.1567587874	2.8489569911	.7078017964	.0565857337	8492.5748720114	1441.1750703130	257.2149403027	.9989075197
-2.3	.1186288366	2.7271151246	.7195579200	.0535752293	5565.8539479568	1015.5575301375	185.8157764831	.9986132760
-2.2	.0908279594	2.6148634600	.7299704161	.0507842650	3951.2828099464	739.3965476313	138.8424642524	.9982681253
-2.1	.0703020842	2.5094062370	.7391506517	.0482230433	2878.2627345351	552.9205916066	106.6720161181	.9978661600
-2.0	.0549773803	2.4088911914	.7472044207	.0458923774	2141.2921676758	422.6973957068	83.8771971998	.9974006650
-1.9	.0434191406	2.3120743118	.7542298858	.0437865904	1620.8409020496	329.1128017504	67.2476962174	.9968639174
-1.8	.0346193261	2.2181129316	.7603164965	.0418957979	1244.4872225296	260.1809268904	54.8057929055	.9962469456
-1.7	.0278602764	2.1264344519	.7655446026	.0402076327	966.7740787678	208.3148758899	45.2895329767	.9955392449
-1.6	.0226251509	2.0366511793	.7699855398	.0387084971	758.2736110607	166.5621685079	37.8691283049	.9947284424
-1.5	.0185378987	1.9485040720	.7737020140	.0373844383	599.4071127507	137.6010824306	31.9833468778	.9937999031
-1.4	.0153223490	1.8618250235	.7767486628	.0362217299	476.8271354276	113.1489687452	27.2440964285	.9927362652
-1.3	.0127739348	1.7765112584	.7791727031	.0352072361	381.2328698073	93.6028656724	23.3769430700	.9915168891
-1.2	.0107399087	1.6925077651	.7810146107	.0343286169	306.0129123469	77.8146397867	20.1841125437	.9901172018
-1.1	.0091053504	1.6097951293	.7823087918	.0335744201	246.3823462456	64.9469883841	17.5205666414	.9885079132
-1.0	.0077831746	1.5283810325	.7830842259	.0329340961	198.8203671722	54.3790747938	15.2782259370	.9866540761
-0.9	.0067069330	1.4482942577	.7833650701	.0323979592	160.6969922486	45.6434394271	13.3753520498	.9845139584
-0.8	.0058255866	1.3695804139	.7831712203	.0319571165	130.0204382151	38.3830436541	11.7492699497	.9820376901
-0.7	.0050996808	1.2922988382	.7825188306	.0316033746	105.2632587013	32.3215318814	10.3512959731	.9791656451
-0.6	.0044985263	1.2165202967	.7814207963	.0313291348	85.2407846340	27.2423292630	9.1431492381	.9758265137
-0.5	.0039981075	1.1423252127	.7798872051	.0311272821	69.0248692419	22.9737429157	8.0943774570	.9719350283
-0.4	.0035795213	1.0698022264	.7779257650	.0309910735	55.8818215891	19.3782035596	7.1804871015	.9673893084
-0.3	.0032278031	.9990469378	.7755422146	.0309140272	45.2271457249	16.3444017709	6.3815695118	.9620678174
-0.2	.0029310402	.9301607218	.7727407245	.0308898169	36.5921054295	13.7814732057	5.6812806915	.9558259616
-0.1	.0026796972	.8632495263	.7695242942	.0309121718	29.5987145868	11.6146508485	5.0660762818	.9484924341
0.0	.0024661001	.7984225847	.7658951516	.0309747867	23.9408008344	9.7819787639	4.5246326059	.9398655223
0.1	.0022840407	.7357909866	.7618551583	.0310712427	19.3694975926	8.2318015274	4.0474046978	.9297097748
0.2	.0021284690	.6754660680	.7574062225	.0311949437	15.6820019117	6.9208257899	3.6262860669	.9177536819
0.3	.0019952559	.6175575899	.7525507205	.0313390698	12.7127683109	5.8126076531	3.2543446233	.9036893678
0.4	.0018810071	.5621716965	.7472919238	.0314965541	10.3265405870	4.8763597741	2.9256160365	.8871757206
0.5	.0017829166	.5094086537	.7416344264	.0316600834	8.4127865157	4.0860006863	2.6349406981	.8678468238
0.6	.0016986521	.4593603955	.7355845642	.0318221296	6.8812158565	3.4193892893	2.3778339994	.8453278746
0.7	.0016262638	.4121079227	.7291508149	.0319750128	5.6581445492	2.8577022358	2.1503822201	.8192607057
0.8	.0015641117	.3677186235	.7223441639	.0321109975	4.6835273227	2.3849226795	1.9491582168	.7893402119
0.9	.0015108076	.3262436108	.7151784179	.0322224235	3.9085239312	1.9874167048	1.7711525170	.7553610170
1.0	.0014651697	.2877151909	.7076704497	.0323018676	3.2934956169	1.6535795295	1.6137164647	.7172704304
1.1	.0014261845	.2521445961	.6998403530	.0323423306	2.8063514956	1.3735378386	1.4745148595	.6752195660
1.2	.0013929780	.2195201263	.6917114895	.0323374419	2.4211817126	1.1388977699	1.3514861204	.6296007767
1.3	.0013647915	.1898058405	.6833104151	.0322816699	2.1171270791	.9425304303	1.2428084590	.5810584441
1.4	.0013409626	.1629409304	.6746666734	.0321705241	1.8774446612	.7783885852	1.1468708874	.5304636410
1.5	.0013209106	.1388398786	.6658124555	.0320007338	1.6887362956	.6413494878	1.0622481505	.4788514884
1.6	.0013041236	.1173934668	.6567821314	.0317703879	1.5403128543	.5270798190	.9876788695	.4273306437
1.7	.0012901500	.0984706449	.6476116677	.0314790213	1.4236717091	.4319194702	.9220463434	.3769827511
1.8	.0012785901	.0819212154	.6383379567	.0311276395	1.3320685626	.3527814868	.8643615718	.3287719606
1.9	.0012690907	.0675792271	.6289980875	.0307186731	1.2601578438	.2870659422	.8137481589	.2834800267
2.0	.0012613398	.0552669172	.6196285968	.0302558645	1.2037583688	.2323658697	.7694288342	.2416737262
2.1	.0012550630	.0447989982	.6102647391	.0297440931	1.1595230584	.1875036612	.7307133836	.2037025786
2.2	.0012500199	.0359870622	.6009398139	.0291891497	1.1248532682	.1502765680	.6969878381	.1697191042
2.3	.0012460012	.0286438687	.5916845847	.0285974778	1.0976997844	.1196101282	.6677048036	.1397120665
2.4	.0012428260	.0225873008	.5825268147	.0279759002	1.0764538140	.0944184966	.6423748497	.1135442423
2.5	.0012403392	.0176438073	.5734909376	.0273313489	1.0598523911	.0737907821	.6205589036	.0909887956
2.6	.0012384089	.0136511995	.5645978682	.0266706170	1.0469035484	.0569626067	.6018616056	.0717609534
2.7	.0012369243	.0104607264	.5558649505	.0260001456	1.0368274005	.0432921899	.5859256012	.0555437356
2.8	.0012357932	.0079384099	.5473060296	.0253258541	1.0290099583	.0322403392	.5724267361	.0420077924
2.9	.0012349394	.0059656733	.5389316295	.0246530202	1.0229670648	.0233537931	.5610701176	.0308260611
3.0	.0012343012	.0044393368	.5307492132	.0239862083	1.0183163232	.0162514164	.5515969860	.0216841729
3.1	.0012338287	.0032710863	.5227634988	.0233292418	1.0147552945	.0106127994	.5437323172	.0142875157
3.2	.0012334823	.0023865322	.5149768106	.0226852141	1.0120445748	.0061688560	.5372830521	.0083657185
3.3	.0012332309	.0017239832	.5073894399	.0220565300	1.0099946482	.0026940598	.5320368273	.0036751651
3.4	.0012330501	.0012330501	.5000000000	.0214449667	1.0084556388	.0000000000	.5278110627	.0000000001

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-3.3$								
-2.8	.8314735695	3.8207404258	.6214662874	.0739762988	116908.5443700378	19318.6020160743	3193.7877448557	.9997687182
-2.7	.5773555446	3.4927975062	.6409300639	.0707726054	56346.1855552464	9499.5715268374	1602.6774897186	.9996516519
-2.6	.4123184048	3.2512534503	.6586642207	.0674613109	30464.2399321710	5245.0011990053	903.9248244448	.9995033658
-2.5	.3008201862	3.0610482395	.6747149333	.0641485593	17910.8255306062	3152.0681134216	555.4847110280	.9993198022
-2.4	.2233010083	2.9030601224	.6891565399	.0609161194	11220.5660415723	2020.4235707688	364.4644911667	.9990964874
-2.3	.1682083563	2.7661270032	.7020813531	.0578232358	7385.4046615011	1361.9757492174	251.7576144381	.9988284852
-2.2	.1283581177	2.6434076801	.7135913069	.0549097574	5055.5205248652	955.7741473137	181.2339723845	.9985103205
-2.1	.0991064550	2.5305566445	.7237915087	.0521997415	3571.6404238266	692.9184342362	134.9326391132	.9981358691
-2.0	.0773607376	2.4247395252	.7327855480	.0497049963	2588.9142496159	515.9297342301	103.2916140967	.9976982100
-1.9	.0610123140	2.3240711033	.7406722934	.0474282532	1916.4365362495	392.7005786104	80.9232469769	.9971894385
-1.8	.0485957639	2.2272799456	.7475438789	.0453658301	1443.3582481713	304.4195351471	64.6440791789	.9966004352
-1.7	.0390764355	2.1335010886	.7534845918	.0435097601	1102.6368313945	239.6071595403	52.4949668643	.9959205878
-1.6	.0317139174	2.0421442144	.7585704136	.0418494245	852.2686214174	191.0073276647	43.2272303310	.9951374582
-1.5	.0259721176	1.9528078960	.7628690120	.0403727589	665.1126820577	153.8902116033	36.0703108747	.9942363685
-1.4	.0214588205	1.8652227665	.7664400284	.0390671127	523.1470227521	125.0873803445	30.3202879115	.9932000325
-1.3	.0178843595	1.7792132698	.7693355449	.0379198335	414.1104118443	102.4266368084	25.7442060496	.9920077989
-1.2	.0150329468	1.6946715826	.7716006496	.0369186458	329.4768797046	84.3821564171	22.0215961413	.9906351888
-1.1	.0127425310	1.6115396340	.7732740441	.0360518737	263.1997024221	69.8643068013	18.9577234654	.9890530016
-1.0	.0108904913	1.5297965816	.7743886564	.0353085537	210.9129583596	58.0793120165	16.4099083087	.9872263859
-0.9	.0093833745	1.4494500018	.7749722386	.0346784678	169.4124703904	48.4395720899	14.2719233785	.9851136970
-0.8	.0081494670	1.3705296245	.7750479370	.0341521224	136.3114507770	40.5034272923	12.4635028128	.9826651305
-0.7	.0071333747	1.2930828161	.7746348302	.0337206907	109.8077718160	33.9341846562	10.9231575307	.9798210846
-0.6	.0062920366	1.2171712599	.7737484358	.0333759316	88.5239710047	28.4717781186	9.6031721987	.9765102105
-0.5	.0055917738	1.1428684445	.7724011890	.0331100948	71.3955039267	23.9128649106	8.4660681059	.9726471080
-0.4	.0050060878	1.0702576838	.7706028979	.0329158170	57.5915297081	20.0966483939	7.4820675810	.9681296341
-0.3	.0045140086	.9994304631	.7683611818	.0327860177	46.4579655467	16.8946465507	6.6272532063	.9628358109
-0.2	.0040988478	.9304849610	.7656818990	.0327137943	37.4759992666	14.2032165932	5.8822158169	.9566203641
-0.1	.0037472507	.8635246291	.7625695692	.0326923238	30.2314733476	11.9380291126	5.2310507876	.9493109902
0.0	.0034484720	.7986567407	.7590277974	.0327147706	24.3920101281	10.0299372862	4.6606054147	.9407045703
0.1	.0031938199	.7359908396	.7550597001	.0327742075	19.6897152242	8.4218551482	4.1599092699	.9305637289
0.2	.0029762258	.6756370361	.7506683399	.0328635495	15.9079474095	7.0663731175	3.7197391935	.9186143948
0.3	.0027899106	.6177041156	.7458571653	.0329755078	12.8710869623	5.9239173655	3.3322842486	.9045453791
0.4	.0026301239	.5622974416	.7406304547	.0331025645	10.4365402575	4.9613140724	2.9908855034	.8880114189
0.5	.0024929395	.5095166537	.7349937594	.0332369755	8.4884312065	4.1506578689	2.6899322491	.8686415955
0.6	.0023750941	.4594531810	.7289543367	.0333708023	6.9325796598	3.4684108877	2.4242010844	.8460553693
0.7	.0022738595	.4121876157	.7225215610	.0334959778	5.6924728148	2.8946782645	2.1897277749	.8198884226
0.8	.0021869415	.3677870144	.7157072993	.0336044062	4.7060113240	2.4126199279	1.9827043334	.7898296789
0.9	.0021123984	.3263022197	.7085262330	.0336880979	3.9228662512	2.0079686936	1.7998956257	.7556688601
1.0	.0020485767	.2877653166	.7009961070	.0337393361	3.3023225186	1.6686321093	1.6384711987	.7173505719
1.1	.0019940591	.2571873557	.6931378871	.0337508692	2.8115133622	1.3843609708	1.4959489744	.6750265907
1.2	.0019476228	.2195564864	.6849758081	.0337161207	2.4239716097	1.1464714631	1.3701485025	.6290941759
1.3	.0019087068	.1898366427	.6765372965	.0336294038	2.1184394459	.9476108881	1.2591514880	.5802070792
1.4	.0018748847	.1629669111	.6678527604	.0334861278	1.8778902574	.7815591732	1.1612684495	.5292494886
1.5	.0018468442	.1388616853	.6589552414	.0332829783	1.6887252249	.6430600399	1.0750101383	.4772717707
1.6	.0018233698	.1174116707	.6498799386	.0330180571	1.5401143277	.5276769735	.9990628880	.4253978094
1.7	.0018038294	.0984857508	.6406636157	.0326909677	1.4234568931	.4316700984	.9322671785	.3747223604
1.8	.0017876645	.0819336699	.6313439205	.0323028343	1.3319411567	.3518907976	.8735988638	.3262190811
1.9	.0017743808	.0675894249	.6219586454	.0318562506	1.2601857811	.2856914798	.8221526332	.2806750287
2.0	.0017635423	.0552752061	.6125449691	.0313551584	1.2039491171	.2308483411	.7771273662	.2386583262
2.1	.0017547651	.0448056837	.6031387188	.0308046625	1.1598943240	.1854953146	.7378131240	.2005166982
2.2	.0017477131	.0359924110	.5937736913	.0302107948	1.1254304142	.1480676798	.7035795742	.1663967745
2.3	.0017420935	.0286481124	.5844810689	.0295802455	1.0984109102	.1172540269	.6738657016	.1362883306
2.4	.0017376534	.0225906387	.5752889499	.0289200789	1.0773131831	.0919554550	.6481706936	.1100428463
2.5	.0017341759	.0176464095	.5662220287	.0282374553	1.0608426970	.0712510341	.6260459218	.0874304233
2.6	.0017314767	.0136532097	.5573014012	.0275393753	1.0480073728	.0543686864	.6070879649	.0681617701
2.7	.0017294008	.0104622649	.5485445226	.0268324611	1.0380281129	.0406607450	.5900326268	.0519160677
2.8	.0017278190	.0079395764	.5399652857	.0261227841	1.0302922344	.0295835367	.5772499110	.0383608253
2.9	.0017266252	.0059665493	.5315742058	.0254157432	1.0243171484	.0206804081	.5657399036	.0271664868
3.0	.0017257328	.0044399883	.5233786896	.0247159927	1.0197221182	.0135676749	.5561295013	.0180167537
3.1	.0017250721	.0032715662	.5153833603	.0240274174	1.0162063470	.0079230284	.5481699006	.0106155542
3.2	.0017245877	.0023868822	.5075904162	.0233531455	1.0135319870	.0034759843	.5416347388	.0046914363
3.3	.0017242360	.0017242360	.5000000000	.0226955933	1.0115109518	.0000000000	.5363187554	.0000000001
$\xi_1=-3.2$								
-2.7	.8576363200	3.7487590347	.6177545705	.0744904723	128697.2632514699	18569.9679743130	3174.0831610227	.9997529617
-2.6	.5999139794	3.4179159649	.6366633575	.0714488455	52202.5763456682	9103.9917614337	1588.8955037444	.9996275558
-2.5	.4317023772	3.1739635248	.6539126463	.0682959254	28114.7352944666	5009.9454789701	893.7047827383	.9994684299
-2.4	.3174383309	2.9818034057	.6695436565	.0651316610	16461.0242623587	3006.2800541927	547.5732492885	.9992710473
-2.3	.2375306199	2.8222692566	.6836237370	.0620339339	10267.2438050107	1915.7136843789	358.1376330341	.9990303558
-2.2	.1803898575	2.6841526860	.6962371715	.0590600639	6727.1145856285	1266.2795335312	246.5678167272	.9987407244
-2.1	.1387930943	2.5605677534	.7074775823	.0562494879	4583.2030485178	898.9576197746	176.8902130589	.9983958483
-2.0	.1080582354	2.4471278235	.7174420099	.0536269137	3222.3081186603	648.6902321930	131.2377416045	.9979866177
-1.9	.0850566313	2.3409621169	.7262265495	.0512054686	2324.1981733565	481.1575565502	100.1071745437	.9975101447
-1.8	.0676467936	2.2401541424	.7339233223	.0489895593	1711.8972432620	364.6505297418	78.1494923014	.9969535652
-1.7	.0543340752	2.1434062891	.7406185241	.0469773048	1282.8227474880	281.4466366256	62.2071430671	[illegible]
-1.6	.0440582759	2.0498321905	.7463913034	.0451625099	[illegible]	220.5615601613	50.3389758173	.9955647790
-1.5	.0360569558	1.9588244345	.7513132478	.0435361993	[illegible]	[illegible]	[illegible]	.9946861687
-1.4	.0297752274	1.8699682877	.7554482998	.0420877703	[illegible]	140.4362000668	34.3061251713	.9936824144
-1.3	.0248049690	1.7829843411	.7588529599	.0408058274	455.6505145761	113.6651769912	28.7830865307	.9925229602
-1.2	.0208431144	1.6976897705	.7615766719	.0396787626	358.8946720996	92.6814190472	24.3618543456	.9911834695
-1.1	.0176626702	1.6139718126	.7636623131	.0386951408	284.1498505535	76.0370968780	20.7760593062	.9896344233
-1.0	.0150922114	1.5317693890	.7651467374	.0378439362	225.8877202271	62.6983498294	17.8334421842	.9878413684
-0.9	.0130013053	1.4510602333	.7660613357	.0371146602	180.1533832031	51.9126355781	15.3948600625	.9857626527
-0.8	.0112899831	1.3718512730	.7664325917	.0364974164	144.3338330157	43.1275512676	13.3546721770	.9833484393
-0.7	.0098811449	1.2941745876	.7662826729	.0359828641	115.3661796980	35.9234057633	11.6344705922	.9805351270
-0.6	.0087148563	1.2180776393	.7656296988	.0355622341	92.5277094471	29.9841663803	10.1739371604	.9772632725
-0.5	.0077443076	1.1436247147	.7644887381	.0352271981	74.2790325884	25.0654877032	8.9263127753	.9734352691
-0.4	.0069326832	1.0708916817	.7628717863	.0349698133	59.6664559238	20.9767580361	7.8549137867	.9689526384
-0.3	.0062508631	.9999642780	.7607884776	.0347824222	47.9487221781	17.5676434129	6.9306315811	.9636927249
-0.2	.0056756822	.9309362197	.7582464875	.0346575554	38.5446038650	14.7183582362	6.1301202971	.9575044743
-0.1	.0051886591	.8639074748	.7552519788	.0345878364	30.9951346144	12.3325655185	5.4344655356	.9502292690
0.0	.0047747382	.7989825633	.7518100484	.0345658922	24.9350289649	10.3321547841	4.8281975472	.9416472106

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-3.2$ (Continued)								
0.1	.0044220149	.7362689331	.7479251763	.0345842743	20.0748292714	8.6532793578	4.2985498121	.9315234932
0.2	.0041206381	.6758749260	.7436016800	.0346353935	16.1791606943	7.2434399194	3.8348989833	.9195808184
0.3	.0038625962	.6179079877	.7388441739	.0347114737	13.0607110297	6.0592020433	3.4283366841	.9055038287
0.4	.0036413047	.5624723945	.7336580306	.0348045278	10.5679547103	5.0644564732	3.0713396589	.8889420440
0.5	.0034513222	.5096669132	.7280498403	.0349063614	8.5785231646	4.2290594789	2.7575134673	.8695182627
0.6	.0032881266	.4595822696	.7220278571	.0350086072	6.9935178239	3.5277621722	2.4813916524	.8468447462
0.7	.0031479378	.4122984870	.7156024233	.0351027933	5.7329992139	2.9393590050	2.2382770581	.8205494714
0.8	.0030275771	.3678821602	.7087863542	.0351804474	4.7323825004	2.4460040720	2.0241153911	.7903139034
0.9	.0029243547	.3263837555	.7015952681	.0352332362	3.9395391185	2.0326571076	1.8353936159	.7559216883
1.0	.0028359800	.2878350498	.6940478405	.0352531374	3.3124539797	1.6866306930	1.6690575981	.7173141708
1.1	.0027604898	.2522468407	.6861659649	.0352326376	2.8173239550	1.3972172281	1.5224447605	.6746441612
1.2	.0026961906	.2196070683	.6779748005	.0351649473	2.4270098369	1.1553793988	1.3932285273	.6283153532
1.3	.0026416127	.1898794923	.6695026934	.0350442210	2.1197735700	.9534916929	1.2793720836	.5789935720
1.4	.0025954734	.1630030532	.6607809609	.0348657665	1.8782471459	.7851233642	1.1790895467	.5275797749
1.5	.0025566474	.1388920208	.6518435376	.0346262274	1.6885905794	.6448553698	1.0908130775	.4751436961
1.6	.0025241439	.1174369942	.6427264895	.0343237233	1.5398047920	.5281254015	1.0131647888	.4228284285
1.7	.0024970879	.0985067647	.6334674129	.0339579326	1.4231717191	.4310963430	.9449325598	.3717451227
1.8	.0024747056	.0819509954	.6241047421	.0335301068	1.3317990455	.3505444022	.8850490597	.3228791596
1.9	.0024563129	.0676036109	.6146770004	.0330430130	1.2602510036	.2837638759	.8325734364	.2770239429
2.0	.0024413057	.0552867367	.6052220325	.0325008028	1.2042499068	.2284860494	.7866752446	.2347489379
2.1	.0024291528	.0448149838	.5957762583	.0319088176	1.1604357231	.1828101632	.7466202818	.1963992838
2.2	.0024193885	.0359998518	.5863739883	.0312733414	1.1261731552	.1451447167	.7117580789	.1621184505
2.3	.0024116077	.0286540158	.5770468349	.0306013208	1.0993974805	.1141576500	.6815108511	.1318837429
2.4	.0024054599	.0225952820	.5678232461	.0299000709	1.0784916984	.0887341627	.6553637653	.1055458592
2.5	.0024006450	.0176500293	.5587281782	.0291769874	1.0621903803	.0679411083	.6328564188	.0828664723
2.6	.0023969076	.0136560060	.5497829141	.0284392840	1.0495010614	.0509970482	.6135754506	.0635505935
2.7	.0023940333	.0104644051	.5410050217	.0276937681	1.0396460983	.0372471691	.5971482257	.0472725940
2.8	.0023918432	.0079411991	.5324084407	.0269466652	1.0320146468	.0261423689	.5832375383	.0336960718
2.9	.0023901902	.0059677678	.5240036758	.0262034954	1.0261262361	.0172218952	.5715372747	.0224883849
3.0	.0023889546	.0044408947	.5157980742	.0254690024	1.0216023269	.0100989933	.5617689662	.0133308633
3.1	.0023880398	.0032722338	.5077961597	.0247471294	1.0181442702	.0044490784	.5536791387	.0059256545
3.2	.0023873691	.0023873691	.5000000000	.0240410361	1.0155162374	.0000000000	.5470373443	.0000000001
$\xi_1=-3.1$								
-2.6	.8844575727	3.6774488554	.6140174347	.0749929742	100850.5004312427	17833.2952027798	3155.1128142867	.9997355225
-2.5	.6231935040	3.3437796266	.6323564623	.0721120931	48261.9955166395	8716.8603189348	1575.6569480256	.9996008457
-2.4	.4518463984	3.0974742351	.6491030904	.0691177121	25891.9048494378	4781.2169914800	883.9108208373	.9994296461
-2.3	.3348349077	2.9033995771	.6642941632	.0661036758	15096.8294118054	2853.0181698706	540.0125279248	.9992168431
-2.2	.2525400724	2.7423484716	.6779906675	.0631438867	9375.2312732345	1814.9966390599	352.1083380921	.9989567262
-2.1	.1933393129	2.6030698605	.6902694524	.0602935251	6114.6719380705	1213.8870264853	241.6367388369	.9986428715
-2.0	.1499742797	2.4786363039	.7012163416	.0575913370	4146.3106059705	844.9272930535	172.7756458526	.9982680239
-1.9	.1177276358	2.3646227753	.7109207170	.0550623848	2901.0425454499	607.4482610614	127.7487475040	.9978239384
-1.8	.0934372223	2.2581242981	.7194714801	.0527208351	2082.1538623922	448.4503177891	97.1098294579	.9973011755
-1.7	.0749307211	2.1571948338	.7269542052	.0505725240	1525.9461449837	338.4060393654	75.5471020637	.9966888435
-1.6	.0606857995	2.0605118992	.7334492669	.0486171695	1137.7044921840	260.0627858371	59.9281263867	.9959742816
-1.5	.0496178463	1.9671686871	.7390307245	.0468501875	860.3545329874	202.9218003721	48.3291617403	.9951426736
-1.4	.0409431972	1.8765413843	.7437657723	.0452641253	658.2736678768	160.3658071732	39.5266499600	.9941765825
-1.3	.0340887074	1.7882024373	.7477145945	.0438497525	508.5346904320	128.0939445447	32.7182200787	.9930553895
-1.2	.0286306738	1.7018627276	.7509304980	.0425968638	395.9758496636	103.2341136873	27.3633523342	.9917546207
-1.1	.0242528319	1.6173323785	.7534602267	.0414948489	310.3259426655	83.8215043693	23.0891200536	.9902451372
-1.0	.0207170253	1.5344938137	.7553443865	.0405330771	244.4748729699	68.4825593123	19.6326658549	.9884921625
-0.9	.0178424494	1.4532830003	.7566179314	.0397011430	193.4040694892	56.2380628466	16.8051085694	.9864541119
-0.8	.0154907924	1.3736762350	.7573106771	.0389890047	153.5083672830	46.3773692609	14.4683267619	.9840811868
-0.7	.0135554880	1.2956807161	.7574478216	.0383870465	122.1563325099	38.3762542701	12.5196868725	.9813136881
-0.6	.0119538683	1.2193277183	.7570504600	.0378860841	97.3993256390	31.8421631303	10.8817918678	.9780800045
-0.5	.0106213862	1.1446675572	.7561360880	.0374773319	77.7753689181	26.4770414186	9.4954723224	.9742942260
-0.4	.0095073276	1.0717657755	.7547190934	.0371523436	62.1746392207	22.0516745708	8.3149135252	.9698533479
-0.3	.0085716066	1.0007001474	.7528112354	.0369029365	49.7457444808	18.3876970923	7.3042154922	.9646340433
-0.2	.0077823526	.9315582118	.7504221175	.0367211072	39.8294393224	15.3447976812	6.4349303235	.9584890281
-0.1	.0071140824	.8644351178	.7475596549	.0365989443	31.9110852048	12.8114978062	5.6842764224	.9512431123
0.0	.0065463066	.7994316260	.7442305421	.0365285452	25.5860984159	10.6984221632	5.0338280925	.9426891493
0.1	.0060624608	.7366521454	.7404407236	.0365019404	20.5345178668	8.9333291383	4.4685433293	.9325842862
0.2	.0056490812	.6762027179	.7361958677	.0365110308	16.5020580650	7.4573991691	3.9760350757	.9206471861
0.3	.0052951646	.6181888913	.7315018451	.0365475434	13.2858299785	6.2224321495	3.5460196647	.9065572901
0.4	.0049916699	.5627134412	.7263652082	.0366030100	10.7234614150	5.1887086562	3.1698955100	.8899575994
0.5	.0047311273	.5098739298	.7207936660	.0366687723	8.6847217482	4.3233407756	2.8404184325	.8704630759
0.6	.0045073295	.4597601125	.7147965451	.0367360200	7.0650124444	3.5989875185	2.5514492995	.8476770076
0.7	.0043150891	.4124512280	.7083852266	.0367958626	5.7802631530	2.9928442959	2.2977562087	.8212177800
0.8	.0041500438	.3680132339	.7015735410	.0368394383	4.7628982262	2.4858403401	2.0748581244	.7907576059
0.9	.0040085033	.3264960775	.6943781065	.0368580584	3.9586271006	2.0619953837	1.8789002417	.7560726544
1.0	.0038873250	.2879311111	.6868185887	.0368433854	3.3238752343	1.7078994697	1.7065537986	.7171003838
1.1	.0037838157	.2523287833	.6789178649	.0367876366	2.8237178561	1.4122888681	1.5549348567	.6739951731
1.2	.0036956525	.2196767456	.6707020714	.0366838048	2.4302118887	1.1656977385	1.4215378912	.6271691148
1.3	.0036208197	.1899385177	.6622005232	.0365258833	2.1210456801	.9601700627	1.3041810227	.5773035283
1.4	.0035575578	.1630528386	.6534454932	.0363090791	1.8784441288	.7890200001	1.2009604605	.5253207022
1.5	.0035043239	.1389338073	.6444718514	.0360299972	1.6882802192	.6466315053	1.1102122856	.4723148279
1.6	.0034597591	.1174718765	.6353165708	.0356867805	1.5393541215	.5282900685	1.0304801226	.4194530605
1.7	.0034226634	.0985357104	.6260181152	.0352791903	1.4228087670	.4300409541	.9604875756	.3678668680
1.8	.0033919759	.0819748603	.6166157379	.0348086154	1.3316568078	.3485694674	.8991145482	.3185559150
1.9	.0033667585	.0676231514	.6071487214	.0342780071	1.2603985715	.2810996561	.8453767620	.2723210484
2.0	.0033461829	.0553026194	.5976556007	.0336917387	1.2047143448	.2253085331	.7984079373	.2297328902
2.1	.0033295207	.0448277941	.5881734090	.0330553998	1.1612173140	.1792534316	.7574442184	.1911328783
2.2	.0033161334	.0360101009	.5787369873	.0323755382	1.1272559081	.1413105180	.7218105218	.1566576561
2.3	.0033054656	.0286621473	.5693783923	.0316593675	1.1007562782	.1101228162	.6909085599	.1262761804
2.4	.0032970369	.0226016778	.5601264289	.0309144625	1.0800972736	.0845563572	.6642063536	.0998305163
2.5	.0032904354	.0176550153	.5510063250	.0301484621	1.0640116316	.0636632819	.6412290969	.0770742355
2.6	.0032853114	.0136598577	.5420395533	.0293687988	1.0515082196	.0466508943	.6215512666	.0577052278
2.7	.0032813705	.0104673531	.5332437961	.0285824691	1.0418111011	.0328558027	.6047898991	.0413918967
2.8	.0032783679	.0079434342	.5246330396	.0277958541	1.0343119793	.0217224034	.5905989615	.0277930212
2.9	.0032761016	.0059694463	.5162177759	.0270145955	1.0285332139	.0127850510	.5786647471	.0165721857
3.0	.0032744075	.0044421431	.5080052892	.0262435244	1.0240991460	.0056533415	.5687022138	.0074078429
3.1	.0032731533	.0032731533	.5000000000	.0254866402	1.0207139091	.0000000000	.5604521630	.0000000000

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-3.0$								
-2.5	.9119466311	3.6068188933	.6102554756	.0754833217	93358.5362103773	17108.1057670045	3136.8691421888	.9997161515
-2.4	.6472083485	3.2704022387	.6280101831	.0727615052	44517.4852123465	8337.8110565209	1562.9535437387	.9995711274
-2.3	.4727702357	3.0218046884	.6442364961	.0699253778	23790.4811336069	4558.5209944760	874.5362244850	.9993864229
-2.2	.3530354836	2.8258615539	.6589674121	.0670628026	13814.0777852345	2710.6545124235	532.7942699997	.9991563357
-2.1	.2683606749	2.6633283461	.6722581430	.0642436492	8541.1331504078	1718.0574535375	346.3682755296	.9988744008
-2.0	.2070934565	2.5229147833	.6841786733	.0615207796	5545.2417368598	1144.6076741996	236.9560123102	.9985332831
-1.9	.1619433326	2.3976550480	.6948075315	.0589319992	3742.4335087109	793.5117228311	168.8818802580	.9981246308
-1.8	.1281606260	2.2830884018	.7042268535	.0565024488	2605.7678308840	568.1348656709	124.4573160984	.9976388828
-1.7	.1025521346	2.1762778751	.7125186611	.0542470633	1860.9737997176	417.6660956245	94.2912129708	.9970650237
-1.6	.0829167201	2.0752496346	.7197622039	.0521728637	1356.9999075209	313.8348275261	73.1077630495	.9963902761
-1.5	.0677059425	1.9786576785	.7260321760	.0502809568	1006.6082645557	240.1454800650	57.7987981449	.9955997229
-1.4	.0558119780	1.8855757793	.7313976242	.0485681986	757.3299627512	186.5742138132	46.4574059887	.9946758465
-1.3	.0464308138	1.7953644732	.7359213768	.0470285220	576.4815845664	146.8122829448	37.8719751645	.9935979685
-1.2	.0389716610	1.7075839253	.7396598532	.0456539626	443.0709056985	116.7654650998	31.2487910906	.9923415747
-1.1	.0329956449	1.6219356800	.7426631394	.0444354233	343.2456081143	93.7038275212	26.0537199268	.9908774984
-1.0	.0281735379	1.5382230512	.7449752434	.0433632262	267.6427047651	75.7627407567	21.9186221012	.9891709363
-0.9	.0242561595	1.4563237855	.7466344638	.0424274927	209.7962057538	61.6407857318	18.5842815237	.9871802620
-0.8	.0210533616	1.3761709409	.7476738276	.0416183914	165.1536827184	50.4117284644	15.8646245979	.9848555966
-0.7	.0184189321	1.2977393350	.7481215640	.0409762845	130.4536265627	41.4045520901	13.6237228025	.9821370919
-0.6	.0162396340	1.2210358062	.7480015949	.0403417995	103.3222987200	34.1251823459	11.7606771316	.9789528771
-0.5	.0144271703	1.1460920953	.7473340300	.0398558455	82.0073291881	28.2043723836	10.1994798659	.9752166188
-0.4	.0129122442	1.0729595303	.7461356592	.0394595904	65.1983668641	23.3623595559	8.8820885246	.9708246531
-0.3	.0116401318	1.0017049376	.7444204423	.0391444124	51.9042464012	19.3844893598	7.7636143080	.9656526667
-0.2	.0105673580	.9324073726	.7421999948	.0389018352	41.3675125746	16.1041408651	6.8089278951	.9595519434
-0.1	.0096591834	.8651553728	.7394840726	.0387234550	33.0040497303	13.3905938148	5.9902312081	.9523452662
0.0	.0088876918	.8000445178	.7362810580	.0386008668	26.3598425684	11.1402911717	5.2852976289	.9438226854
0.1	.0082303249	.7371751349	.7325984484	.0385255958	21.0795950360	9.2704673695	4.6761813163	.9337375555
0.2	.0076687544	.6766500348	.7284433499	.0384890407	16.8836680456	7.7144461600	4.1482600041	.9218035268
0.3	.0071880068	.6185721952	.7238229732	.0384824330	13.5509277968	6.4181309534	3.6895177003	.9076935708
0.4	.0067757823	.5630423384	.7187451305	.0384968197	10.9058450926	5.3373564784	3.2900018734	.8910426149
0.5	.0064219211	.5101563796	.7132187261	.0385230728	8.8086882125	4.4358691739	2.9414088362	.8714558982
0.6	.0061179830	.4600027473	.7072542321	.0385519308	7.1479929491	3.6837711911	2.6367642086	.8485255853
0.7	.0058569153	.4126596075	.7008641372	.0385740759	5.8347276901	3.0563095965	2.3701745097	.8218581992
0.8	.0056327888	.3681920474	.6940633530	.0385802479	4.7977340692	2.5329250698	2.1366324015	.7911145124
0.9	.0054405880	.3266493052	.6868695597	.0385613952	3.9801377434	2.0964975137	1.9318627101	.7560615822
1.0	.0052760424	.2880621531	.6793034723	.0385088585	3.3365045599	1.7327424899	1.7521996676	.7166322806
1.1	.0051354929	.2524405628	.6713890073	.0384145809	2.8305750111	1.4297242743	1.5944882249	.6729833172
1.2	.0050157838	.2197717921	.6631533313	.0382713353	2.4334514090	1.1774599303	1.4560040513	.6255377241
1.3	.0049141767	.1900190328	.6546267777	.0380729540	2.1221423984	.9675950918	1.3343881363	.5749966435
1.4	.0048282820	.1631207487	.6458426212	.0378145455	1.8783915874	.7931367717	1.2275928804	.5223093947
1.5	.0047560038	.1389908058	.6368367107	.0374926814	1.6877334896	.6482319340	1.1338372859	.4686009025
1.6	.0046954967	.1175194570	.6276469652	.0371055356	1.5387322592	.5279831170	1.0515694058	.4150682702
1.7	.0046451313	.0985751929	.6183127528	.0366529616	1.4223680028	.4282943050	.9794346247	.3628679291
1.8	.0046034666	.0820074124	.6088741780	.0361364968	1.3315425684	.3457416892	.9162486615	.3130167265
1.9	.0045692289	.0676498048	.5993713111	.0355592888	1.2606822241	.2774650526	.8609744311	.2663240269
2.0	.0045412937	.0553242834	.5898434021	.0349259456	1.2054189585	.2210763537	.8127020888	.2233611290
2.1	.0045186716	.0448452672	.5803281185	.0342423179	1.1623355534	.1745827308	.7706317344	.1844641933
2.2	.0045004960	.0360240806	.5708608491	.0335152292	1.1287623215	.1363216571	.7340583674	.1497608541
2.3	.0044860126	.0286732387	.5614741083	.0327521713	1.1026156124	.1049063687	.7023587809	.1192093383
2.4	.0044745691	.0226104016	.5521970680	.0319609884	1.0822699943	.0791800080	.6749801573	.0926407857
2.5	.0044656064	.0176618161	.5430552346	.0311495703	1.0664574915	.0581771740	.6514301836	.0697986316
2.6	.0044586497	.0136651114	.5340702747	.0303255741	1.0541884778	.0410917728	.6312685538	.0503719388
2.7	.0044532994	.0104713741	.5252599869	.0294961888	1.0446898203	.0272502275	.6140997480	.0340217768
2.8	.0044492228	.0079464828	.5166384034	.0286679533	1.0373567012	.0160892382	.5995670017	.0204010520
2.9	.0044461459	.0059717358	.5082160017	.0278466303	1.0317152235	.0071373904	.5873473759	.0091687899
3.0	.0044438459	.0044438459	.5000000000	.0270371368	1.0273934695	.0000000000	.5771478337	.0000000000
$\xi_1=-2.9$								
-2.4	.9401126318	3.5368779752	.6064693130	.0759610375	86212.0464008758	16393.9248774034	3119.3440397862	.9996945519
-2.3	.6719725707	3.1977973456	.6236253833	.0733962401	40962.4236583891	7966.4869409292	1550.7775110107	.9995379293
-2.2	.4944935454	2.9469738171	.6393138975	.0707176178	21805.4700828941	4341.5710330881	865.5726401652	.9993380509
-2.1	.3720656631	2.7492140571	.6535645075	.0680072027	12608.8410733060	2572.7496660853	525.9105764840	.9990884974
-2.0	.2850240183	2.5852395486	.6664271886	.0653308127	7761.7617154180	1624.6895816109	340.9095204155	.9987819329
-1.9	.2216896434	2.4437240408	.6779656026	.0627388483	5016.1757459061	1078.2594781686	232.5176950039	.9984099670
-1.8	.1747429554	2.3176663338	.6882514741	.0602679540	3369.3322719448	744.5473119831	165.2009735796	.9979629724
-1.7	.1394047140	2.2025725871	.6973601057	.0579430936	2334.5645418517	530.7028765734	121.3555238377	.9974298504
-1.6	.1124530751	2.0954760207	.7053669649	.0557797115	1658.9966220061	388.6695274061	91.6434436122	.9967977336
-1.5	.0916600739	1.9943767714	.7123452161	.0537857714	1223.6091539904	290.8129702873	70.8236610316	.9960516170
-1.4	.0754527645	1.8979067072	.7183640382	.0519635554	888.2632815100	221.5804492208	55.8114378128	.9951739018
-1.3	.0627013539	1.8051212453	.7234875679	.0503111776	664.8537084559	171.4132050895	44.7161087977	.9941438394
-1.2	.0525824171	1.7153660685	.7277743227	.0488238067	503.4760437799	134.3040638537	36.3375996895	.9929368542
-1.1	.0444882018	1.6281896399	.7312769788	.0474946215	384.9637540857	106.3604216443	29.8905593664	.9915237212
-1.0	.0379651359	1.5432845703	.7340424029	.0463155337	296.6973511972	84.9908229343	24.8470281304	.9898695708
-0.9	.0326713406	1.4604476227	.7361118589	.0452777152	230.1670545629	68.4280633002	20.8434991721	.9879326844
-0.8	.0283467983	1.3795520019	.7375213316	.0443719692	179.5105856279	55.4407697950	17.6242945780	.9856630394
-0.7	.0247921116	1.3005278797	.7383019236	.0435889757	140.6111369817	45.1540761667	15.0060350736	.9830005566
-0.6	.0218531933	1.2233485095	.7384802973	.0429194424	110.5283892953	36.9353285557	12.8549535429	.9798729983
-0.5	.0194101116	1.1480201713	.7380791418	.0423541832	87.1275556612	30.3195926578	11.0718298684	.9761934635
-0.4	.0173688832	1.0745747509	.7371176529	.0418841428	68.8386597496	24.9601089451	9.5820114779	.9718574339
-0.3	.0156553815	1.0030641273	.7356120208	.0415003847	54.4908463427	20.5947274805	8.3285569380	.9667393431
-0.2	.0142107785	.9335557911	.7335759213	.0411940533	43.2027760022	17.0227813720	7.2674833390	.9606886778
-0.1	.0129881081	.8661292779	.7310210108	.0409563213	34.3329119575	14.0889329634	6.3644160692	.9535256976
0.0	.0119496565	.8008731202	.7279574263	.0407783311	27.2757119561	11.6715343374	5.5921936717	.9450369786
0.1	.0110649677	.7378820991	.7243942895	.0406511379	21.7222322091	9.6746602931	4.9291330680	.9349711866
0.2	.0103093096	.6772546378	.7203402167	.0405656612	17.3417760722	8.0217845508	4.3577578958	.9230357800
0.3	.0096624866	.6190902264	.7158048313	.0405126515	13.8663678974	6.6914878552	3.8648558124	.9088957538
0.4	.0091079159	.5634868025	.7107942768	.0404826789	11.1179867565	5.5141151450	3.4357722996	.8921760643
0.5	.0086319045	.5105380483	.7053217224	.0404661484	8.9520586734	4.5692777537	3.0638763762	.8724699534
0.6	.0082230807	.4603305946	.6993978532	.0404533474	7.2433041791	3.7839502793	2.7401525494	.8493558623
0.7	.0078719444	.4129411543	.6930363306	.0404345284	5.8367487412	3.1310057974	2.4578863537	.8224256771
0.8	.0075705113	.3684336359	.6862532095	.0404000302	4.8369570577	2.5880773867	2.2114198870	.7913261851
0.9	.0073120281	.3268563175	.6790672923	.0403404349	4.0039400511	2.1366649180	1.9959601363	.7558133093
1.0	.0070907466	.2882391863	.6715004001	.0402467589	3.3501771203	1.7616279332	1.8074274282	.7158146134

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-2.9$ (Continued)								
1.1	.0069017419	.2525915689	.6635775432	.0401106707	2.8377095925	1.4496210507	1.6423346067	.6714902185
1.2	.0067407673	.2199001900	.6553269701	.0399247238	2.4365534728	1.1906395464	1.4976899092	.6232773976
1.3	.0066041383	.1901277980	.6467800810	.0396825923	2.1229177749	.9756508972	1.3709182490	.5719026156
1.4	.0064886399	.1632124847	.6379711989	.0393792916	1.8779816150	.7972940078	1.2597968898	.5183493593
1.5	.0063914527	.1390678008	.6289371936	.0390113674	1.6868838590	.6494322120	1.1624024519	.4637810248
1.6	.0063100946	.1175837290	.6197169701	.0385770340	1.5379138429	.5269493715	1.0770669002	.4094317786
1.7	.0062423738	.0986285257	.6103508365	.0380762486	1.4218629576	.4255808044	1.0023407037	.3564884615
1.8	.0061863526	.0820513832	.6008797807	.0375107100	1.3315053704	.3417725849	.9369617617	.3059883053
1.9	.0061403179	.0676858074	.5913446897	.0368837759	1.2611826551	.2725641237	.8798290089	.2587501189
2.0	.0061027576	.0553535464	.5817855533	.0362003028	1.2064721409	.2154899767	.8299798488	.2153449299
2.1	.0060723411	.0448688693	.5722406944	.0354664166	1.1639227305	.1684976310	.7865707559	.1761014074
2.2	.0060479034	.0360429637	.5627460666	.0346892294	1.1308450568	.1298786351	.7488605345	.1411353136
2.3	.0060284299	.0286882202	.5533346557	.0338765230	1.1051453385	.0982109213	.7161958396	.1103911329
2.4	.0060130438	.0226221852	.5440360110	.0330364210	1.0851942975	.0723105498	.6879986560	.0836862519
2.5	.0060009933	.0176710023	.5348759243	.0321770722	1.0697241278	.0511914037	.6637555079	.0607515096
2.6	.0059916399	.0136722078	.5258762604	.0313063641	1.0577478248	.0340316051	.6430082211	.0412651188
2.7	.0059844462	.0104768054	.5170549359	.0304316821	1.0484962673	.0201456133	.6253461017	.0248792238
2.8	.0059789651	.0079506007	.5084260288	.0295597240	1.0413693284	.0089611225	.6103994178	.0112396547
2.9	.0059748282	.0059748282	.5000000000	.0286963733	1.0358980137	.0000000000	.5978340744	.0000000001
$\xi_1=-2.8$								
-2.3	.9689645319	3.4676347368	.6026595903	.0764256502	79402.1335361854	15690.2876677738	3102.5300925750	.9996703673
-2.2	.6975000306	3.1259782639	.6192029446	.0740154593	37590.5086742767	7602.5385348192	1539.1213626145	.9995006842
-2.1	.5170358301	2.8730003359	.6343364202	.0714931192	19932.1404930708	4130.0884413690	857.0125473953	.9992836730
-2.0	.3919510250	2.6734816632	.6480867022	.0689350051	11477.4158474210	2439.0713638889	519.3539223324	.9990120825
-1.9	.3025618913	2.5081127471	.6604990491	.0664028967	7034.1264939376	1534.6944536088	335.7245402327	.9986775628
-1.8	.2371657471	2.3655344338	.6716313133	.0639446224	4525.0021371809	1014.6684231658	228.3142587358	.9982704907
-1.7	.1884167805	2.2387130009	.6815488906	.0615954751	3024.9272623418	697.8808632792	161.7254164422	.9977797428
-1.6	.1515088265	2.1231240348	.6903206598	.0593800083	2085.6593665437	495.6125931487	118.4358984031	.9971924082
-1.5	.1231937192	2.0157730914	.6980158675	.0573139309	1474.6948849324	361.3336264309	89.1591069933	.9964934257
-1.4	.1012186295	1.9146360402	.7047018495	.0554059124	1064.4483708370	269.2243493322	68.6874621695	.9956651353
-1.3	.0839877111	1.8183240267	.7104424562	.0536591947	781.5130986306	204.2610957338	53.9588158266	.9946867240
-1.2	.0703504773	1.7258752084	.7152970431	.0520729603	581.9131526504	157.3406836035	43.0981689607	.9935335482
-1.1	.0594650758	1.6366212453	.7193199003	.0506434514	438.3583740740	122.7507836797	34.9165744298	.9921763056
-1.0	.0507075292	1.5500995062	.7225600128	.0493648530	333.4324785245	96.7955490003	28.6367507018	.9905800283
-0.9	.0436101033	1.4659940894	.7250610599	.0482299688	255.6450215452	77.0184227277	23.7366989571	.9887028582
-0.8	.0378186404	1.3840954681	.7268615862	.0472307211	197.2965210031	61.7469457319	19.8573888840	.9864945635
-0.7	.0330625306	1.3042724248	.7279952885	.0463585072	153.0896136390	49.8177512136	16.7465453640	.9838947447
-0.6	.0291332728	1.2264522312	.7284913825	.0456044394	119.3145319528	40.4057621627	14.2234576819	.9808306749
-0.5	.0258689760	1.1506064306	.7283750197	.0449594973	93.3285784647	32.9154459806	12.1563959597	.9772147186
-0.4	.0231430302	1.0767404602	.7276677375	.0444146102	73.2200732801	26.9100147927	10.4477905836	.9729412741
-0.3	.0208557418	1.0048859145	.7263879309	.0439606906	57.5869359153	22.0643875392	9.0243072587	.9678832061
-0.2	.0189281025	.9350946211	.7245513390	.0435886313	45.3880547601	18.1333568334	7.8300770952	.9618877717
-0.1	.0172971088	.8674239445	.7221715423	.0432892799	35.8417909813	14.9296784383	6.8220005645	.9547721157
0.0	.0159122188	.8019829025	.7192604701	.0430534015	28.3555598010	12.3087537400	5.9664395260	.9463185395
0.1	.0147326516	.7388287965	.7158289155	.0428716372	22.4762452520	10.1577657201	5.2368538452	.9362699487
0.2	.0137253143	.6780641391	.7118870584	.0427344687	17.8547978511	8.3878692192	4.6120906885	.9243261984
0.3	.0128632009	.6197837261	.7074449919	.0426321952	14.2206274188	6.9285054633	4.0751311716	.9101424871
0.4	.0121241483	.5640817495	.7025132496	.0425549308	11.3628527567	5.7232133647	3.6121616749	.8933315189
0.5	.0114898641	.5110488900	.6971033255	.0424926277	9.1164131530	4.7265083470	3.2118784093	.8734717865
0.6	.0109451630	.4607693630	.6912281764	.0424351310	7.3516695134	3.9015312812	2.8649614273	.8501248592
0.7	.0104773638	.4133179306	.6849026952	.0423722700	5.9665397399	3.2182590121	2.5636730018	.8228646591
0.8	.0100758117	.3687569188	.6781441369	.0422939858	4.8804954401	2.6521286618	2.3015481672	.7913208325
0.9	.0097314975	.3271333176	.6709724810	.0421904971	4.0299406901	2.1829698476	2.0731541697	.7552358724
1.0	.0094367544	.2884760612	.6634107087	.0420524994	3.3646277822	1.7941682620	1.8739018800	.7145312595
1.1	.0091850153	.2527936111	.6554849754	.0418713897	2.8448588538	1.4720047478	1.6998966985	.6693720645
1.2	.0089706188	.2200719774	.6472246603	.0416395069	2.4392887512	1.2051287361	1.5478197071	.6202141207
1.3	.0087886537	.1902733142	.6386622779	.0413503735	2.1231919190	.9841355091	1.4148321537	.5678162475
1.4	.0086348352	.1633352147	.6298332430	.0409989203	1.8770903016	.8012244149	1.2984980641	.5132050704
1.5	.0085054064	.1391708074	.6207754882	.0405816768	1.6856641237	.6499207707	1.1967210343	.4575920099
1.6	.0083970601	.1176697131	.6115289425	.0400969100	1.5368856985	.5248483029	1.1076921942	.4022568653
1.7	.0083068765	.0986998740	.6021348895	.0395446946	1.4213299807	.4215420279	1.0298470305	.3484231971
1.8	.0082322744	.0821102065	.5926352321	.0389269051	1.3316257565	.3362937505	.9618292896	.2971520319
1.9	.0081709717	.0677339705	.5830717024	.0382471247	1.2620190734	.2660240677	.9024605818	.2492722018
2.0	.0081209545	.0553926931	.5734850544	.0375104741	1.2080264190	.2081760588	.8507146162	.2053527953
2.1	.0080804508	.0449004429	.5639142873	.0367233693	1.1661597291	.1605268299	.8056952358	.1657118901
2.2	.0080479087	.0360682245	.5543959368	.0358932249	1.1337088834	.1216138396	.7666176090	.1304496235
2.3	.0080219773	.0287082616	.5449634737	.0350281253	1.1085701631	.0895735189	.7327920788	.0994929336
2.4	.0080014889	.0226379486	.5356468347	.0341364840	1.0891113968	.0635901605	.7036102888	.0726419811
2.5	.0079854424	.0176832909	.5264721040	.0332267172	1.0740663166	.0423534096	.6785332916	.0496120588
2.6	.0079729872	.0136817007	.5174613493	.0323069487	1.0624520987	.0251229756	.6570814171	.0300681568
2.7	.0079634081	.0104840710	.5086326067	.0313847640	1.0535052384	.0111994137	.6388257241	.0136516687
2.8	.0079561094	.0079561094	.5000000000	.0304670213	1.0466318582	.0000000000	.6233808914	.0000000001
$\xi_1=-2.7$								
-2.2	.9985110971	3.3990976100	.5988269742	.0768766954	72920.3035913526	14996.7364316939	3086.4201490492	.9996431676
-2.1	.7238043653	3.0549580571	.6147438471	.0746183302	34395.7486385351	7245.6736746877	1527.9778970957	.9994587041
-2.0	.5404163953	2.7999026978	.6293052821	.0722505653	18166.0152613700	3923.8021061955	848.8487786053	.9992222466
-1.9	.4127170564	2.5986887366	.6425353998	.0698443136	10416.3138858271	2309.3960695434	513.1171451570	.9989255696
-1.8	.3210061907	2.4319785145	.6544751958	.0674573573	6355.4246254740	1447.8810535189	330.8061859132	.9985591324
-1.7	.2535600476	2.2883828522	.6651771954	.0651348741	4069.4158082603	953.6680429116	224.3385771107	.9981118584
-1.6	.2030092394	2.1608382248	.6747009224	.0629106423	2707.2890078696	653.3631037282	158.4481190358	.9975708536
-1.5	.1645231669	2.0447920831	.6831092365	.0608085949	1857.4154801141	462.1317865632	115.6914033812	.9969210504
-1.4	.1348295669	1.9372244149	.6904655016	.0588444747	1306.6659331114	335.5387941778	86.8312389246	.9961447637
-1.3	.1116526607	1.8360885668	.6968314957	.0570274279	938.3065357587	248.9601252299	66.6922948661	.9952211394
-1.2	.0933752960	1.7399763735	.7022659484	.0553614403	685.3064869312	188.0879579893	52.2341743710	.9941254747
-1.1	.0788275853	1.6479098437	.7068235885	.0538465680	507.5923909149	144.2655223697	41.5969638036	.9928283844
-1.0	.0671502694	1.5592074628	.7105545921	.0524799540	380.3587254246	112.0688386333	33.6024327969	.9912947796

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-2.7$ (Continued)								
-0.9	.0577039313	1.4733961262	.7135043362	.0512566384	287.7777570915	87.9941171162	27.4810745826	.9894826217
-0.8	.0500072632	1.3901518430	.7157133791	.0501701853	219.4770493657	69.7162343633	22.7166365388	.9873414052
-0.7	.0436942555	1.3092590448	.7172176054	.0492131514	168.4965711139	55.6548762279	18.9544067953	.9848103154
-0.6	.0384840031	1.2305821784	.7180484880	.0483774238	130.0666538232	44.7126978344	15.9454055623	.9818160020
-0.5	.0341590963	1.1540455463	.7182334318	.0476544529	100.8565222312	36.1128721808	13.5114726322	.9782699054
-0.4	.0305499562	1.0796187548	.7177961745	.0470354019	78.5006073625	29.2957740575	11.5228787882	.9740650756
-0.3	.0275233497	1.0073060053	.7167572268	.0465112335	61.2932036825	23.8517886672	9.8836440795	.9690724411
-0.2	.0249738826	.9371380299	.7151343411	.0460727506	47.9875982286	19.4767197212	8.5217131897	.9631365205
-0.1	.0228176405	.8691658363	.7129430016	.0457106044	37.6614456717	15.9416442774	7.3822589089	.9560706459
0.0	.0209873951	.8034556804	.7101969314	.0454152834	29.6249840162	13.0721861173	6.4230403676	.9476518930
0.1	.0194289620	.7400848468	.7069086126	.0451770936	23.3574589532	10.7340409694	5.6111355859	.9376161298
0.2	.0180984131	.6791379428	.7030898173	.0449861399	18.4624337305	8.8227206510	4.9206085925	.9256539177
0.3	.0169599300	.6207034932	.6987521456	.0448323168	14.6359392733	7.2561878700	4.3308218356	.9114084698
0.4	.0159841377	.5648706912	.6939075634	.0447053177	11.6434810037	5.9694996592	3.8252004597	.8944774834
0.5	.0151468069	.5117262150	.6885689350	.0445946685	9.3032379161	4.9198649096	3.3903171341	.8744213674
0.6	.0144278343	.4613510621	.6827505370	.0444897923	7.4736468420	4.0387096756	3.0152070322	.8507809955
0.7	.0138104397	.4138173959	.6764685423	.0443801099	6.0441302823	3.3194689765	2.6908499049	.8231082769
0.8	.0132805301	.3691854369	.6697414552	.0442551769	4.9281041649	2.7259080553	2.4097747343	.7910119422
0.9	.0128261937	.3275004614	.6625904812	.0441048586	4.0576577366	2.2358335236	2.1657551867	.7542183183
1.0	.0124372971	.2887900032	.6550398092	.0439195381	3.3794730204	1.8310945019	1.9535729326	.7126420622
1.1	.0121051629	.2530613740	.6471167865	.0436903499	2.8516726062	1.4968015554	1.7688321325	.6664553896
1.2	.0118223120	.2202996343	.6388519686	.0434094282	2.4413694397	1.2207107557	1.6078128047	.6161384017
1.3	.0115822584	.1904661487	.6302790274	.0430701539	2.1227522806	.9927340992	1.4673539719	.5624913336
1.4	.0113793446	.1634978484	.6214345113	.0426673851	1.8755833317	.8045474966	1.3447597813	.5065952923
1.5	.0112086107	.1393073013	.6123574546	.0421976488	1.6840154045	.6492747758	1.2377234771	.4497215374
1.6	.0110656913	.1177836480	.6030888473	.0416592793	1.5356584545	.5212314195	1.1442653409	.3932057839
1.7	.0109467331	.0987944138	.5936709817	.0410524846	1.4208418257	.4157156366	1.0626816414	.3383155072
1.8	.0108483296	.0821881489	.5841467068	.0403793320	1.3320308051	.3288372426	.9915023196	.2861389613
1.9	.0107674700	.0677977871	.5745586267	.0396436474	1.2633652775	.2573769709	.9294556616	.2375149105
2.0	.0107014971	.0554445625	.5649482840	.0388508325	1.2102952426	.1986704470	.8754386043	.1930077549
2.1	.0106480731	.0449422774	.5553553741	.0380076097	1.1692932856	.1505122838	.8284916281	.1529206572
2.2	.0106051508	.0361016945	.5458170319	.0371217114	1.1376282188	.1110766867	.7877774234	.1173332158
2.3	.0105709480	.0287348159	.5363672264	.0362015375	1.1131873321	.0788516760	.7525627055	.0861500344
2.4	.0105439245	.0226588345	.5270362922	.0352558028	1.0943372196	.0525845902	.7222026944	.0591498104
2.5	.0105227598	.0176995729	.5178506129	.0342931993	1.0798151622	.0312369681	.6961278899	.0360287875
2.6	.0105063320	.0136942785	.5088324629	.0333220939	1.0686446464	.0139472493	.6738328562	.0164359880
2.7	.0104936976	.0104936976	.5000000000	.0323502755	1.0600698850	.0000000000	.6548667952	.0000000001
$\xi_1=-2.6$								
-2.1	1.0287608882	3.3312748109	.5949721545	.0773137168	66758.4581140422	14312.8204574910	3071.0073412523	.9996124290
-2.0	.7508989629	2.9847495099	.6102490884	.0752040278	31372.4557978937	6895.4075797256	1517.3402847857	.9994111485
-1.9	.5646543047	2.7276990496	.6242217931	.0729886401	16502.8621639098	3722.4480634431	841.0745064725	.9991524927
-1.8	.4343890847	2.5248593597	.6369121562	.0707332134	9422.2531713457	2183.5066007146	507.1934403946	.9988270847
-1.7	.3403888261	2.3568672279	.6483573313	.0684915982	5723.0317526040	1364.0655022626	326.1476818056	.9984239721
-1.6	.2709111083	2.2123061414	.6586049669	.0663062701	3647.2692705174	895.0989823019	220.5839139794	.9979303485
-1.5	.2185654159	2.0840853484	.6677091523	.0642093576	2414.6291357212	610.8542254782	155.3623979526	.9973312015
-1.4	.1784990489	1.9676264994	.6757271246	.0622239846	1648.3235608752	430.3352230969	113.1154233473	.9966088717
-1.3	.1474177657	1.8598860469	.6827167068	.0603657136	1153.6230432863	311.1723324936	84.6533090610	.9957425013
-1.2	.1230246894	1.7587965265	.6887344021	.0586439471	824.0784330790	229.9182337885	64.8317321248	.9947073522
-1.1	.1036829313	1.6629318603	.6938340473	.0570632011	598.6889650209	172.9681990817	50.6312086370	.9934739630
-1.0	.0882044977	1.5712990179	.6980659249	.0556242063	441.0640231817	132.1030417083	40.2063295700	.9920071127
-0.9	.0757137664	1.4832041587	.7014762398	.0543248255	328.7281579847	102.1808702429	32.3891704489	.9902645484
-0.8	.0655567026	1.3981643212	.7041068785	.0531607917	247.3741227703	79.8854166817	26.4177034781	.9881954289
-0.7	.0572390568	1.3158478334	.7059953808	.0521262834	187.6491313859	63.0195416432	21.7812061978	.9857384267
-0.6	.0503834415	1.2360333013	.7071750701	.0512143607	143.2937703901	50.0928581766	18.1291254453	.9828194217
-0.5	.0446990008	1.1585808700	.7076753004	.0504172822	110.0303913610	40.0718181917	15.2156573700	.9793487184
-0.4	.0399596561	1.0834117272	.7075217859	.0497267273	84.8806077466	32.2264481394	12.8651021307	.9752177173
-0.3	.0359682976	1.0104932122	.7067369937	.0491339436	65.7357591470	26.0318475944	10.9496624065	.9702949854
-0.2	.0326451609	.9398277673	.7053405806	.0486298357	51.0804736235	21.1046249402	9.3748948530	.9644217098
-0.1	.0298191920	.8714445305	.7033498646	.0482050149	39.8111097605	17.1606931990	8.0699816439	.9574065880
0.0	.0274215727	.8053927347	.7007803223	.0478498198	31.1142785587	13.9867706478	6.9811042799	.9490203454
0.1	.0253808216	.7417363321	.6976461072	.0475543228	24.3841641655	11.4203073005	6.0668538350	.9389902897
0.2	.0236390605	.6806494261	.6939605837	.0473083328	19.1653563080	9.3383302728	5.2950023461	.9269956633
0.3	.0221491464	.6219122215	.6897368707	.0471014039	15.1127390180	7.6427794167	4.6401991782	.9126650559
0.4	.0208724533	.5659072884	.6849883883	.0469228594	11.9629600207	6.2585743102	4.0823056245	.8955778211
0.5	.0197771463	.5126160077	.6797293995	.0467618390	9.5138771492	5.1260774182	3.6051761282	.8752722266
0.6	.0188368308	.4621151211	.6739755343	.0466073754	7.6095744069	4.1978909997	3.1957561310	.8512637862
0.7	.0180294891	.4144733594	.6677442817	.0464485064	6.1293168750	3.4361037393	2.8434071120	.8230774575
0.8	.0173366392	.3697481629	.6610554342	.0462744226	4.9793251960	2.8102215060	2.5393964791	.7902964865
0.9	.0167426674	.3279825469	.6539314630	.0460746539	4.0865918989	2.2955963396	2.2765783343	.7526278182
1.0	.0162342968	.2892021966	.6463978051	.0458392866	3.3941927549	1.8722220892	2.0487437338	.7099786592
1.1	.0158001626	.2534129141	.6384830401	.0455592076	2.8577043419	1.5238025937	1.8510878177	.6625315278
1.2	.0154304730	.2205985031	.6302189395	.0452263605	2.4424482932	1.2370244245	1.6793273388	.6107984220
1.3	.0151167388	.1907192902	.6216403714	.0448340004	2.1213591316	1.0009846201	1.5299064837	.5556327849
1.4	.0148515573	.1637113355	.6127850555	.0443769280	1.8733265687	.8067369324	1.3998120179	.4981846411
1.5	.0146284403	.1394864689	.6036931637	.0438516850	1.6810316689	.6469295083	1.2864810560	.4397997345
1.6	.0144416784	.1179331993	.5944067807	.0432566906	1.5342840274	.5155137257	1.1877263992	.3818819631
1.7	.0142862326	.0989185040	.5849692392	.0425923049	1.4205273076	.4075088732	1.1016756620	.3257507308
1.8	.0141576496	.0822904518	.5754243631	.0418608068	1.3329153270	.3188110063	1.0267212055	.2725246303
1.9	.0140519931	.0678815480	.5658156545	.0410662842	1.2654718987	.2460370236	.9614787134	.2230511029
2.0	.0139657900	.0555126413	.5561854671	.0402144387	1.2135758999	.1863970230	.9047526516	.1778855079
2.1	.0138959847	.0449971850	.5465742127	.0393123163	1.1736592898	.1375895160	.8555072993	.1373100935
2.2	.0138399020	.0361456232	.5370196414	.0383679835	1.1429706097	.0977152354	.8128423251	.1013775045
2.3	.0137952127	.0287696677	.5275562337	.0373901698	1.1193901423	.0652061447	.7759721183	.0699640153
2.4	.0137599040	.0226862465	.5182147315	.0363879031	1.1012858486	.0387669400	.7442082653	.0428217339
2.5	.0137322505	.0177209423	.5090218251	.0353701608	1.0874014017	.0173268562	.7169447053	.0196237498
2.6	.0137107863	.0137107863	.5000000000	.0343455588	1.0767694505	.0000000000	.6936452027	.0000000001

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

$\xi_1 = -2.5$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-2.0	1.0597222493	3.2641743275	.5910958437	.0777362670	60908.8848864860	13638.0954903705	3056.2859273451	.9995775090
-1.9	.7787969371	2.9153651030	.6057197235	.0757717372	28515.2355585535	6551.5620674592	1507.2019720546	.9993569823
-1.8	.5897683348	2.6564071863	.6190873551	.0737060324	14938.6851752875	3525.7691094320	833.6832313213	.9990728289
-1.7	.4569922063	2.4520172613	.6312186812	.0715997787	8492.1492332500	2061.1927281502	501.5763492080	.9987142989
-1.6	.3607416192	2.2828089647	.6421473938	.0695029812	5134.4934388821	1283.0706509010	321.7426151572	.9982687490
-1.5	.2892576442	2.1373409603	.6519166839	.0674553867	3256.5641172971	838.8085742057	217.0439121405	.9977212912
-1.4	.2351308829	2.0084976977	.6605756229	.0654873633	2145.2919038761	570.2204444001	152.4619632019	.9970543520
-1.3	.1934887071	1.8916772522	.6681762125	.0636210594	1456.9934289421	400.1042065607	110.7017494457	.9962471197
-1.2	.1610168997	1.7838144980	.6747710783	.0618716588	1014.3872082469	288.1279707292	82.6192050782	.9952748561
-1.1	.1353992625	1.6828228222	.6804117431	.0602486097	720.7566228066	212.0029049073	63.0997744411	.9941080430
-1.0	.1149807000	1.5872596035	.6851473977	.0587567484	520.7949926052	158.8151183855	49.1440486186	.9927113258
-0.9	.0985563967	1.4961178614	.6890240846	.0573972796	381.5816081368	120.7745174887	38.9205423082	.9910422111
-0.8	.0852354202	1.4086922601	.6920842118	.0561685988	282.8313903782	93.0152733373	31.2712254697	.9890494640
-0.7	.0743499642	1.3244905737	.6943663281	.0550669591	211.6630343181	72.4042701377	25.4412525229	.9866711435
-0.6	.0653935037	1.2431738208	.6959050963	.0540869966	159.6776478908	56.8693218130	20.9252138290	.9838322022
-0.5	.0579777852	1.1645149447	.6967314202	.0532221310	121.2695643713	45.0069361993	17.3765536236	.9804415742
-0.4	.0518023861	1.0883697478	.6968726849	.0524648613	92.6189916891	35.8460989731	14.5525228299	.9763886686
-0.3	.0466328382	1.0146560576	.6963530821	.0518069770	71.0745161290	28.7020392520	12.2797899181	.9715392030
-0.2	.0422846936	.9433384898	.6951940017	.0512397014	54.7651192090	23.0834331202	10.4324187140	.9657303429
-0.1	.0386117809	.8744170493	.6934144715	.0507537858	42.3509029952	18.6321886443	8.9174474224	.9587651876
0.0	.0354974556	.8079183661	.6910316358	.0503395677	32.8596547102	15.0835736896	7.6652522550	.9504067799
0.1	.0328480202	.7438887361	.6880612631	.0499870083	25.5776879167	12.2393219285	6.6229885676	.9403720520
0.2	.0305877308	.6823883847	.6845182763	.0496857207	19.9756837459	9.9491829220	5.7500508927	.9283264927
0.3	.0286549782	.6234865458	.6804172973	.0494249996	15.6575122433	8.0980659204	5.0148815101	.9138808768
0.4	.0269993445	.5672570702	.6757731980	.0491938645	12.3243950129	6.5969509286	4.3926948259	.8965921508
0.5	.0255793199	.5137743747	.6706016484	.0489811224	9.7494687680	5.3763759327	3.8638332454	.8759714761
0.6	.0243605196	.4631096141	.6649196469	.0487754594	7.7595027482	4.3817108451	3.4125546647	.8515032778
0.7	.0233142836	.4153270171	.6587460208	.0485655660	6.2216035770	3.5696870516	3.0261928433	.8226795014
0.8	.0224165716	.3704803806	.6521018761	.0483402986	5.0334418230	2.9058202561	2.6943921467	.7890523510
0.9	.0216470873	.3286097602	.6450109786	.0480888767	4.1159954725	2.3624762703	2.4087050032	.7503056269
1.0	.0209885812	.2897384269	.6375000441	.0478011135	3.4081129172	1.9174046722	2.1621586051	.7063387288
1.1	.0204262961	.2538701954	.6295989169	.0474676690	2.8624056588	1.5526165114	1.9489698588	.6573490629
1.2	.0199475228	.2209872407	.6213406168	.0470803167	2.4421228082	1.2535175632	1.7643162498	.6038908598
1.3	.0195412473	.1910485297	.6127612415	.0466322053	2.1187575221	1.0082332435	1.6041563673	.5468862880
1.4	.0191978686	.1639889849	.6038997138	.0461180988	1.8702040239	.8070786165	1.4650881546	.4875727988
1.5	.0189089746	.1397194738	.5947973752	.0455345735	1.6793322207	.6421392466	1.3442360409	.4273887992
1.6	.0186671647	.1181276813	.5854974350	.0448801549	1.5328814101	.5069374726	1.2391603537	.3678208652
1.7	.0184659094	.0990798705	.5760442950	.0441553762	1.4205994128	.3961650755	1.1477840448	.3102489211
1.8	.0182994385	.0824234826	.5664827805	.0433627497	1.3345715359	.3054679706	1.0683329684	.2558240885
1.9	.0181626534	.0679904651	.5568573155	.0425066463	1.2686970472	.2312719832	.9992868470	.2053993073
2.0	.0180510554	.0556011650	.5472110868	.0415930874	1.2182806947	.1706413057	.9393387300	.1595142072
2.1	.0179606876	.0450685809	.5375852406	.0406294623	1.1797141844	.1211631328	.8873612616	.1184218553
2.2	.0178880856	.0362027427	.5280181581	.0396241886	1.1502281190	.0808533985	.8423784585	.0821396150
2.3	.0178302337	.0288149842	.5185448436	.0385863406	1.1276991612	.0480796186	.8035420001	.0505079911
2.4	.0177845257	.0227218891	.5091964565	.0375252717	1.1105004730	.0214976740	.7701112604	.0232463816
2.5	.0177487278	.0177487278	.5000000000	.0364502544	1.0973860297	.0000000000	.7414364919	.0000000001

$\xi_1 = -2.4$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-1.9	1.0914032955	3.1978039073	.5871987763	.0781439085	55364.2539638461	12972.1243039361	3042.2469780221	.9995376128
-1.8	.8075111013	2.8468169878	.6011568558	.0763206559	25818.9800284715	6213.7655682198	1497.5567504663	.9992949183
-1.7	.6157769289	2.5860445058	.6139034615	.0744014404	13469.7165597334	3333.5144895969	826.6687839346	.9989812787
-1.6	.4805512136	2.3801857427	.6254568387	.0724420806	7623.1071320557	1942.2506182976	496.2597538240	.9985842890
-1.5	.3820961980	2.2098333936	.6358475605	.0704888383	4567.5171505555	1204.7256966042	317.5849283100	.9980892580
-1.4	.3086383803	2.0635236316	.6451147487	.0685787263	2895.4430439599	784.6504324490	213.7125828155	.9974787647
-1.3	.2527515239	1.9341183859	.6533028527	.0667402642	1897.7463108128	531.3341761616	149.7409060118	.9967321000
-1.2	.2095450834	1.8169942638	.6604590163	.0649944783	1282.1462802114	371.3261399483	108.4445656255	.9958245710
-1.1	.1756867453	1.7090664303	.6666310116	.0633559919	887.8795310173	266.3054159152	80.7232174623	.9947266309
-1.0	.1488426821	1.6082307224	.6718656865	.0618340986	627.4240311112	195.1242034791	61.4908333274	.9934027995
-0.9	.1273410699	1.5130292962	.6762078492	.0604337504	453.8407911899	145.5476866678	47.7672415279	.9918103234
-0.8	.1099615306	1.4224422715	.6796995370	.0591564252	328.4727456836	110.2067134511	37.7342993552	.9898975186
-0.7	.0957988722	1.3357536084	.6823795669	.0580008598	242.0901721474	84.5057287784	30.2434591183	.9876017268
-0.6	.0841723753	1.2524623637	.6842833398	.0569636483	180.1465626666	65.4905678172	24.5467597218	.9848468047
-0.5	.0745639278	1.1722225594	.6854428255	.0560397179	135.1336825612	51.2107879545	20.1438857505	.9815400555
-0.4	.0665749515	1.0948015618	.6858866949	.0552226948	102.0546465979	40.3477474117	16.6921160492	.9775685116
-0.3	.0598958728	1.0200506905	.6856405630	.0545051788	77.5148263981	31.9908674906	13.9516335051	.9727944808
-0.2	.0542841440	.9478840425	.6847273189	.0538789430	59.1655240548	25.4992777608	11.7513810954	.9670503058
-0.1	.0495482024	.8782629023	.6831675218	.0533350757	45.3550277992	20.4141196220	9.9672112421	.9601323555
0.0	.0455356204	.8111839804	.6809798500	.0528640798	34.9048176554	16.4017063564	8.5075868407	.9517944108
0.1	.0421242548	.7466702828	.6781815888	.0524559447	26.9631042755	13.2159296536	7.3040329307	.9417408546
0.2	.0392155729	.6847637825	.6747891502	.0521002038	20.9071918119	10.6729323928	6.3046421905	.9296204837
0.3	.0367295723	.6255193199	.6708186120	.0517859895	16.2772764873	8.6337540792	5.4695825581	.9150223729
0.4	.0346008850	.5689993314	.6662862691	.0515020974	12.7308531095	6.9922522608	4.7679413481	.8974760797
0.5	.0327757645	.5152691346	.6612091827	.0512370665	10.0108577126	5.6665735684	4.1754764282	.8764595329
0.6	.0312097425	.4643925949	.6556057159	.0509792975	7.9231082245	4.5930496285	3.6729924584	.8514189767
0.7	.0298657924	.4164280755	.6494960377	.0507171745	6.3201301573	3.7217730999	3.2451539792	.8218058477
0.8	.0287128849	.3714246333	.6429025786	.0504392605	5.0894264339	3.0133532644	2.8796078152	.7871345146
0.9	.0277248440	.3294184756	.6358504147	.0501344995	4.1448799254	2.4365100295	2.5663271587	.7470612609
1.0	.0268794398	.2904297363	.6283675599	.0497924610	3.4203908486	1.9662708298	2.2971163304	.7014778688
1.1	.0261576662	.2544596588	.6204851450	.0494036062	2.8651266283	1.5826058682	2.0652332314	.6506033707
1.2	.0255431649	.2214882988	.6122374628	.0489595641	2.4399476335	1.2693854131	1.8650988533	.5950484429
1.3	.0250217662	.1914728637	.6036618655	.0484534018	2.1146990380	1.0135760975	1.6920717874	.5358246442
1.4	.0245811244	.1643468032	.5947985056	.0478798706	1.8661466385	.8046163055	1.5422716867	.4742807554
1.5	.0242104270	.1400197394	.5856899199	.0472356061	1.6763955885	.6339269982	1.4124399038	.4119703916
1.6	.0239001649	.1183782915	.5763804683	.0465192638	1.5316741294	.4945258935	1.2998285843	.3504796498
1.7	.0236419505	.0992877994	.5669156466	.0457315744	1.4213951245	.3807211948	1.2021117068	.2912575760
1.8	.0234283742	.0825948938	.5573413049	.0448753070	1.3374303211	.2878670573	1.1173131782	.2354880781
1.9	.0232528897	.0681308017	.5477028112	.0439551387	1.2735483465	.2121673465	1.0437482800	.1840233534
2.0	.0231097223	.0557152227	.5380442045	.0429774330	1.2249792507	.1505174585	.9799756491	.1373772658
2.1	.0229937935	.0451605688	.5284073833	.0419499425	1.1880771638	.1003763471	.9247576380	.0957624170
2.2	.0229006573	.0362763355	.5188313743	.0408814544	1.1600591890	.0596626849	.8770274050	.0591501891
2.3	.0228264442	.0288733694	.5093517180	.0397814042	1.1388035993	.0266704194	.8358614641	.0273362086
2.4	.0227678102	.0227678102	.5000000000	.0386594840	1.1226941826	.0000000000	.8004567232	.0000000001

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

$\xi_1 = -2.3$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-1.8	1.1238119004	3.1321710462	.5832817084	.0785362148	50117.6063225039	12314.4756233154	3028.8872124787	.9994917468
-1.7	.8370539429	2.7791169611	.5965616364	.0768499961	23278.8592439385	5881.7025716515	1488.3987031520	.9992233405
-1.6	.6426981504	2.5166279629	.6086716964	.0750735766	12092.4090585226	3145.4395164613	820.0253108326	.9988753477
-1.5	.5050905204	2.3093876030	.6196286467	.0732581956	6812.4138334668	1826.4824674177	491.2378691027	.9984333459
-1.4	.4044838873	2.1379696630	.6294602492	.0714464851	4079.9646986980	1128.8658014318	313.6689091157	.9978801346
-1.3	.3290919011	1.9908899848	.6382019163	.0696727367	2562.1823867581	732.4840573361	210.5842951591	.9971951698
-1.2	.2714733400	1.8609901045	.6458938504	.0679635527	1670.5787498426	494.0736279339	147.1936869794	.9963538538
-1.1	.2267215898	1.7436271438	.6525787050	.0663387096	1122.6374845685	343.8941048113	106.3384353569	.9953266474
-1.0	.1914879923	1.6356983264	.6582997430	.0648121035	773.1141983413	245.6099222351	78.9600249047	.9940779592
-0.9	.1634226891	1.5350834586	.6630994504	.0633926843	543.2471234735	179.1975914811	59.9997154794	.9925647616
-0.8	.1408385435	1.4403107285	.6670185433	.0620853214	388.1177581322	133.0901035639	46.4957348712	.9907348680
-0.7	.1225008382	1.3503483461	.6700953075	.0608915671	281.1327528451	100.3314369728	36.6427014963	.9885247957
-0.6	.1074911562	1.2644702978	.6723652108	.0598103063	205.9872450072	76.5907603491	29.3011372428	.9858571217
-0.5	.0951167241	1.1821674002	.6738607355	.0588382908	152.3816573185	59.0888287237	23.7296667986	.9826372308
-0.4	.0848485420	1.1030869082	.6746113862	.0579705668	113.6376096191	45.9939562687	19.4329491692	.9787493422
-0.3	.0762782662	1.0269905943	.6746438360	.0572008088	85.3238777379	36.0700976122	16.0716336250	.9740517108
-0.2	.0690876094	.9537250297	.6739821808	.0565215734	64.4397312194	28.4553789356	13.4090106896	.9683709239
-0.1	.0630262776	.8832000608	.6726482804	.0559244903	48.9160567303	22.5814791467	11.2761024416	.9614952866
0.0	.0578958382	.8153728573	.6706621656	.0554004041	37.3030196566	17.9909333159	9.5504757196	.9531674364
0.1	.0535377777	.7502357799	.6680424991	.0549394839	28.5701242021	14.3835968506	8.1419596307	.9430765920
0.2	.0498245629	.6878068750	.6648070752	.0545313120	21.9756183272	11.5312798669	6.9831812671	.9308512861
0.3	.0466528815	.6281221755	.6609733485	.0541649675	16.9796093856	9.2639498604	6.0231326110	.9160541272
0.4	.0439384858	.5712292434	.6565589787	.0538291142	13.1852775114	7.4534454885	5.2227235744	.8981811203
0.5	.0416122254	.5171815663	.6515823783	.0535121046	10.2984783815	6.0021556524	4.5516600490	.8766693311
0.6	.0396169728	.4660335528	.6460632483	.0532021083	8.0995828245	4.8350356580	3.9862206687	.8509179548
0.7	.0379052240	.4178359695	.6400230848	.0528872705	6.4235854736	3.8939006685	3.5076525277	.8203285611
0.8	.0364372152	.3726317430	.6334856362	.0525559053	5.1458819166	3.1332953959	3.1009991868	.7843693363
0.9	.0351794376	.3304521118	.6264772893	.0521967227	4.1719841310	2.5174692875	2.7542346138	.7426640320
1.0	.0341034601	.2913131627	.6190273628	.0517990861	3.4300067817	2.0181367191	2.4576162413	.6950980349
1.1	.0331849948	.2552128263	.6111682849	.0513532911	2.8651262421	1.6128011025	2.2031967617	.6419220414
1.2	.0324031528	.2221284299	.6029356351	.0508508532	2.4354598266	1.2834886194	1.9844521321	.5838230310
1.3	.0317398525	.1920149183	.5943680373	.0502847877	2.1089781299	1.0157826042	1.7959255022	.5219298114
1.4	.0311793485	.1648038485	.5855068919	.0496498615	1.8611767603	.7980808226	1.6333552646	.4577335401
1.5	.0307078583	.1404032432	.5763959513	.0489427967	1.6733096140	.6210195897	1.4929013788	.3929308548
1.6	.0303132661	.1186983547	.5670807465	.0481624061	1.5310440176	.4770239207	1.3712083438	.3292263564
1.7	.0299848895	.0995533390	.5576078876	.0473096443	1.4234114656	.3599537312	1.2659462126	.2681456655
1.8	.0297132945	.0828137883	.5480242698	.0463875634	1.3421183461	.2648236592	1.1747932341	.2109021394
1.9	.0294901490	.0683100072	.5383762242	.0454011713	1.2807403489	.1875812809	1.0958652978	.1583362558
2.0	.0293081043	.0558608667	.5287086599	.0443571973	1.2344556743	.1249270017	1.0275585398	.1109213842
2.1	.0291606993	.0452780283	.5190642434	.0432637791	1.1995867249	.0741730205	.9685023328	.0688144755
2.2	.0290422781	.0363703046	.5094826608	.0421300933	1.1733443295	.0331271596	.9175205665	.0319274003
2.3	.0289479191	.0289479191	.5000000000	.0409659533	1.1536160000	.0000000000	.8735995687	.0000000000

$\xi_1 = -2.2$

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
-1.7	1.1569556848	3.0672829762	.5793454173	.0789127711	45162.3475907093	11664.7240298123	3016.2009374395	.9994396573
-1.6	.8674375979	2.7122764400	.5919352632	.0773589871	20890.3144605383	5555.0633677280	1479.7222125826	.9991401979
-1.5	.6705496364	2.4481740231	.6033937334	.0757211725	10803.4287897290	2961.3052590858	813.7472743642	.9987518520
-1.4	.5306340852	2.2396450639	.6137362767	.0740462136	6057.5310713586	1713.6961522167	486.5052359544	.9982567076
-1.3	.4279355946	2.0672462865	.6229881201	.0723732342	3609.8451841014	1055.3317274820	309.9831828277	.9976344485
-1.2	.3506564928	1.9194751942	.6311812986	.0707338310	2255.1851713638	682.1744561638	207.6537665635	.9968606274
-1.1	.2913422425	1.7891549047	.6383521252	.0691526369	1462.4861881151	458.3224059582	144.8151248269	.9959057526
-1.0	.2450718490	1.6716249041	.6445391208	.0676480676	977.2999236776	317.7064982425	104.3782890095	.9947341410
-0.9	.2084819315	1.5637661318	.6497813843	.0662331395	669.1920045742	225.9518795666	77.3246803691	.9933024802
-0.8	.1792080990	1.4634437862	.6541173663	.0649162811	467.4696714830	164.1435105096	58.6216076390	.9915580283
-0.7	.1555492458	1.3691732574	.6575839923	.0637020879	331.9864415323	121.3713767557	45.3248602627	.9894363643
-0.6	.1362574910	1.2799117533	.6602160861	.0625919923	239.0188991887	91.0851175003	35.6412358741	.9868585871
-0.5	.1204022002	1.1949239320	.6620460402	.0615848351	174.0608582706	69.2133150682	28.4399124504	.9837278415
-0.4	.1072793926	1.1136527525	.6631036889	.0606773415	127.9749576681	53.1477852667	22.9858007995	.9799250393
-0.3	.0963498793	1.0358588223	.6634163458	.0598645037	94.8542130732	41.1727376155	18.7881133827	.9753036414
-0.2	.0871961167	.9611781741	.6630089713	.0591398853	70.7917208476	32.1325618255	15.5113944172	.9696833899
-0.1	.0794915521	.8894922139	.6619044468	.0584958582	53.1507614454	25.2324278979	12.9210463210	.9628429479
0.0	.0729784909	.8207058420	.6601239313	.0579237869	40.1197638296	19.9152663456	10.8505434128	.9545115560
0.1	.0674518876	.7547711329	.6576872847	.0574141756	30.4342172855	15.7839760212	9.1790912926	.9443600978
0.2	.0627473245	.6916748258	.6546135411	.0569567915	23.1990141965	12.5511248218	7.8175553619	.9319924638
0.3	.0587319942	.6314284437	.6509214202	.0565407770	17.7726513515	10.0057634226	6.6998865913	.9169388920
0.4	.0552978663	.5740602313	.6466298596	.0561547648	13.6903568880	7.9911226534	5.7758469440	.8986541280
0.5	.0523564621	.5196083583	.6417585570	.0557870055	10.6121957713	6.3893698292	5.0070556731	.8765247629
0.6	.0498348248	.4681150189	.6363285021	.0554255170	8.2874943124	5.1110264068	4.3638097035	.8498917261
0.7	.0476723887	.4196211903	.6303624822	.0550582640	6.5301042619	4.0875150112	3.8228847977	.8180949230
0.8	.0458185317	.3741619149	.6238855389	.0546733690	5.2009781733	3.2659396860	3.3659498383	.7805460438
0.9	.0442306504	.3317620508	.6169253547	.0542593566	4.1957471068	2.6047410710	2.9784091033	.7368307311
1.0	.0428726399	.2924324963	.6095125449	.0538054271	3.4357668479	2.0718849146	2.6485472342	.6868310568
1.1	.0417136888	.2561669404	.6016808328	.0533017496	2.8615993197	1.6417835567	2.3668908655	.6308445714
1.2	.0407273226	.2229392214	.5934670886	.0527397620	2.4292238149	1.2942434116	2.1257273747	.5696627581
1.3	.0398906440	.1927013941	.5849112143	.0521124609	2.1014905045	1.0131941034	1.9187376829	.5045696629
1.4	.0391837288	.1653826002	.5760558690	.0514146606	1.8554752376	.7857974255	1.7407152448	.4372392632
1.5	.0385891480	.1408888241	.5669460335	.0506432005	1.6704944428	.6017635177	1.5873468736	.3695450733
1.6	.0380915894	.1191035766	.5576284244	.0497970802	1.5316076954	.4526219584	1.4550421193	.3033303919
1.7	.0376775586	.0998895081	.5481507822	.0488775069	1.4274833878	.3323097288	1.3407984591	.2402015323
1.8	.0373351437	.0830908903	.5385610633	.0478878433	1.3495366524	.2346481163	1.2420941842	.1813517267
1.9	.0370538272	.0685368561	.5289065783	.0468334546	1.2912726527	.1560878629	1.1568026045	.1277116539
2.0	.0368243366	.0560452246	.5192331219	.0457214608	1.2477855839	.0925070938	1.0831228200	.0795730863
2.1	.0366385205	.0454267056	.5095841430	.0445604078	1.2153762179	.0412503692	1.0195234708	.0370573173
2.2	.0364892455	.0364892455	.5000000000	.0433598822	1.1912599829	[illegible]	.9646967417	[illegible]

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-2.1$								
-1.6	1.1908420045	3.0031466542	.5753907005	.0792731754	40492.2413382744	11022.4497146255	3004.1800577417	.9993767428
-1.5	.8986738258	2.6463064378	.5872789799	.0778468776	18649.0509758743	5233.5437805985	1471.5219689044	.9990428556
-1.4	.6993485509	2.3806986172	.5980713339	.0763429833	9599.6484460956	2780.8782125492	807.8294470309	.9986066760
-1.3	.5572653348	2.1709796931	.6077820521	.0748042475	5356.0886507210	1603.7048890550	482.0567149915	.9980481787
-1.2	.4524816935	1.9976910266	.6164340743	.0732664104	3175.3084037172	983.9694826120	306.5407042971	.9973431228
-1.1	.3733699789	1.8493136116	.6240563672	.0717584101	1972.9746426840	633.5917762311	204.9160533080	.9964621076
-1.0	.3124038329	1.7186539687	.6306816948	.0703028721	1272.2698446286	423.9691380179	142.6003857220	.9953693813
-0.9	.2646494146	1.6010356600	.6363447955	.0689167545	845.2378412200	292.6664464122	102.5594118449	.9940213386
-0.8	.2267301110	1.4933248738	.6410809517	.0676120550	575.2943975036	207.2464201288	75.8125978171	.9923646282
-0.7	.1962683926	1.3933735116	.6449249150	.0663965141	399.4069571886	149.8869839079	57.3529621973	.9903337703
-0.6	.1715504465	1.2996852301	.6479101456	.0652742715	281.8710441007	110.3249219155	44.2503180136	.9878481675
-0.5	.1513163524	1.2112070390	.6500683209	.0642464500	201.6451688494	82.4084067443	34.7257597091	.9848083657
-0.4	.1346242212	1.1271948037	.6514290691	.0633116594	145.8998046829	62.3203660407	27.6558071147	.9810914060
-0.3	.1207596891	1.0471238875	.6520198896	.0624664170	106.5781149493	47.6199910733	22.3113565467	.9765450975
-0.2	.1091740639	.9706282334	.6518662266	.0617054921	78.4883035840	36.7046524647	18.2060518549	.9709810573
-0.1	.0994411623	.8974578323	.6509916650	.0610221842	58.2081583470	28.4971083853	15.0076854940	.9641664267
0.0	.0912266131	.8274483308	.6494182297	.0604085476	43.4364106783	22.2579833629	12.4844847502	.9558143282
0.1	.0842656680	.7604987912	.6471667622	.0598555746	32.5980383105	17.4702172105	10.4716379910	.9455734331
0.2	.0783469275	.6965549974	.6442573609	.0593533526	24.5981450106	13.7660863915	8.8499126032	.9330175676
0.3	.0733002512	.6355965690	.6407098676	.0588912071	18.6650658277	10.8800769425	7.5316890678	.9176372027
0.4	.0689876730	.5776267139	.6365443836	.0584578443	14.2483316499	8.6178314240	6.4516528438	.8988360687
0.5	.0652965022	.5226638225	.6317817999	.0580415042	10.9510922713	6.8353074945	5.5604754090	.8759380160
0.6	.0621340383	.4707343675	.6264443225	.0576301331	8.4846102702	5.4245521912	4.8204516857	.8482113425
0.7	.0594234858	.4218667608	.6205559732	.0572115841	6.6371467096	4.3038399199	4.2024411671	.8149192553
0.8	.0571007759	.3760859489	.6141430438	.0567738491	5.2523875328	3.4107366883	3.6836922933	.7754041823
0.9	.0551120771	.3334086377	.6072344798	.0563053209	4.2142920811	2.6971568269	3.2462744183	.7292077382
1.0	.0534118359	.2938391083	.5998621702	.0557950846	3.4363263243	2.1257957612	2.8759336745	.6762151620
1.1	.0519612284	.2573656491	.5920611185	.0552332256	2.8537296119	1.6675257500	2.5612484678	.6167942017
1.2	.0507269350	.2239576633	.5838694762	.0546111437	2.4179061933	1.2994738956	2.2929993570	.5518815423
1.3	.0496801677	.1935635366	.5753284209	.0539218535	2.0923222222	1.0035892106	2.0636940706	.4829687617
1.4	.0487959004	.1661093490	.5664818718	.0531602511	1.8494809475	.7655641107	1.8672059834	.4119651889
1.5	.0480522587	.1414985034	.5573760431	.0523233257	1.6686777727	.5740154571	1.6984964006	.3409612553
1.6	.0474300387	.1196123091	.5480588458	.0514102954	1.5343245726	.4198575550	1.5533993285	.2719579731
1.7	.0469123271	.1003115135	.5385791615	.0504226501	1.4346929923	.2958184661	1.4284532482	.2066392310
1.8	.0464842015	.0834387227	.5289860202	.0493640920	1.3609684176	.1960642779	1.3207685448	.1462382873
1.9	.0461324927	.0688215920	.5193277252	.0482403716	1.3065358096	.1159053980	1.2279222082	.0915076868
2.0	.0458455943	.0562766161	.5096509703	.0470590252	1.2664395510	.0515656732	1.1478735583	.0427682454
2.1	.0456133066	.0456133066	.5000000000	.0458290313	1.2369744848	.0000000000	1.0788963131	.0000000000
$\xi_1=-2.0$								
-1.5	1.2254779391	2.9397687514	.5714183754	.0796170392	36101.4023238031	10387.2381360073	2992.8221627587	.9993039329
-1.4	.9307739842	2.5812175395	.5825940745	.0783129380	16551.0319608552	4916.8448111892	1463.7929540975	.9989278840
-1.3	.7291115382	2.3142170961	.5927063458	.0769377934	8478.1408947080	2603.9299708636	802.2669048010	.9984344258
-1.2	.5848270856	2.1034123287	.6017684462	.0755304417	4705.8781735833	1496.3269002018	477.8874800191	.9977995809
-1.1	.4781519046	1.9293307770	.6098012529	.0741233652	2774.6387003467	914.6299755042	303.3187502110	.9969940854
-1.0	.3972695490	1.7804385956	.6168309534	.0727428861	1714.1882585730	586.6109502795	202.3665416928	.9959821446
-0.9	.3347031723	1.6495273745	.6228870889	.0714095948	1098.8293461792	390.9071099665	140.5449731399	.9947198544
-0.8	.2855074714	1.5319063182	.6280009610	.0701389073	725.5211805714	268.6818337727	100.8774326079	.9931531985
-0.7	.2462939624	1.4244282605	.6322043860	.0689416764	490.6780190326	189.4130424493	74.4195396596	.9912155093
-0.6	.2146732626	1.3249329897	.6355287664	.0678247995	338.4405959644	136.3572375121	56.1869835589	.9888242533
-0.5	.1889200337	1.2319133678	.6380044439	.0667917873	237.2544255591	99.8881824409	43.2681625395	.9858769741
-0.4	.1677633559	1.1443068832	.6396602954	.0658432737	168.5775174814	74.2457996348	33.8924848869	.9822461980
-0.3	.1502510158	1.0613610090	.6405235334	.0649774572	121.1389440775	55.8625368132	26.9451972876	.9777730845
-0.2	.1356590492	.9825436271	.6406196790	.0641904749	87.8835916914	42.4614508503	21.7028800290	.9722596126
-0.1	.1234299206	.9074818357	.6399726762	.0634767138	64.2807995585	32.5504682275	17.6833852304	.9654591459
0.0	.1131293482	.8359191005	.6386051239	.0628290694	47.3550573497	25.1287455305	14.5576757412	.9570653743
0.1	.1044155761	.7676845151	.6365386005	.0622391635	35.1132598276	19.5108461661	12.0964055002	.9466999652
0.2	.0970171381	.7026701962	.6337940645	.0616975326	26.1969455315	15.2185342007	10.1366475341	.9338998878
0.3	.0907165291	.6408142158	.6303923102	.0611938019	19.6659319418	11.9125229862	8.5606528575	.9181064586
0.4	.0853380580	.5820873494	.6263544619	.0607168552	14.8607120324	9.3484592285	7.2819846815	.8986598699
0.5	.0807387035	.5264824818	.6217024887	.0602550138	11.3131838490	7.3479593250	6.2362824891	.8748053521
0.6	.0768011609	.4740058937	.6164597181	.0597962341	8.6876796165	5.7791972813	5.3749958215	.8457199125
0.7	.0734285036	.4246699131	.6106513298	.0593283300	6.7413625810	4.5436735293	4.6610607114	.8105706907
0.8	.0705400531	.3784866031	.6043048036	.0588392262	5.2972267528	3.5670558557	4.0658699738	.7686150520
0.9	.0680681602	.3354622930	.5974502990	.0583172406	4.2254334269	2.7927477823	3.5671196109	.7193450306
1.0	.0659556826	.2955928617	.5901209403	.0577513932	3.4302468658	2.1773118480	3.1472575724	.6626615991
1.1	.0641539988	.2588597537	.5823529823	.0571317318	2.8407838535	1.6871723757	2.7923525366	.5990391919
1.2	.0626214411	.2252267629	.5741858370	.0564496593	2.4043952996	1.2962125338	2.4912594219	.5296193017
1.3	.0613220561	.1946376422	.5656619436	.0556982468	2.0818865335	.9840042365	2.2349970963	.4561734012
1.4	.0602246241	.1670146122	.5568264741	.0548725081	1.8440366667	.7344910932	2.0162795614	.3809135165
1.5	.0593018852	.1422578273	.5477268737	.0539696164	1.6690454186	.5349992685	1.8291593256	.3061916499
1.6	.0585299288	.1202458294	.5384122498	.0529890404	1.5406485030	.3754881484	1.6687536023	.2341792132
1.7	.0578877123	.1008369786	.5289326307	.0519325838	1.4467191836	.2479781124	1.5310322356	.1666207413
1.8	.0573566825	.0838717929	.5193381288	.0508043183	1.3782261635	.1461103305	1.4126520382	.1047135969
1.9	.0569204751	.0691760787	.5096780503	.0496104077	1.3284544730	.0648058523	1.3108263248	.0491098165
2.0	.0565646741	.0565646741	.5000000000	.0483588315	1.2924216342	.0000000000	1.2232213603	.0000000000
$\xi_1=-1.9$								
-1.4	1.2608702810	2.8771556417	.5674292785	.0799439887	31984.2904038182	9758.6797538774	2982.1215315228	.9992175125
-1.3	.9637490053	2.5170198784	.5778818781	.0787564627	14592.4721895271	4604.6723506921	1456.5304425763	.9987907528
-1.2	.7598546765	2.2487441862	.5873007005	.0775044205	7436.1732186476	2430.2369180622	797.0550237643	.9982279216
-1.1	.6135214665	2.0369630034	.5956980789	.0762229820	4104.8471856513	1391.3850895652	473.9930121374	.9974999406
-1.0	.5049751748	1.8621914447	.6030930334	.0749414929	2406.2492487792	847.1686820529	300.3189120901	.9965710017
-0.9	.4223915844	1.7128823392	.6095092453	.0736837068	1477.5721291642	541.1113539236	200.0009397418	.9953968985
-0.8	.3582845409	1.5818138561	.6149733498	.0724681586	941.1573383481	359.0339155906	138.6447182742	.9939228940
-0.7	.3076985202	1.4642822551	.6195135543	.0713086488	617.3303869548	245.6645473059	99.3283127984	.9920809943
-0.6	.2672344002	1.3571282651	.6231585654	.0702147704	414.6697152119	172.3752516916	73.1416049103	.9897864663
-0.5	.2344921207	1.2581805987	.6259368015	.0691924337	284.0137404021	123.4873380401	55.1226152987	.9869333981

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-1.9$ (Continued)								
-0.4	.2077359017	1.1659221171	.6278758564	.0682443601	197.6735745488	90.0022679421	42.3747886286	.9833890609
-0.3	.1856848065	1.0792813127	.6290021836	.0673705256	139.4295938660	66.5452749291	33.1379634613	.9789867978
-0.2	.1673771500	.9974975067	.6293409666	.0665685501	99.4551837376	49.7937461020	26.3047975774	.9735171494
-0.1	.1520801082	.9200310410	.6289161485	.0658340319	71.6209069834	37.6312711253	21.1572528020	.9667169701
0.0	.1392279235	.8465017999	.6277505914	.0651608335	52.0052405223	28.6738577772	17.2171654126	.9582564390
0.1	.1283787263	.7766460358	.6258663452	.0645413280	38.0429514129	21.9951893034	14.1584997575	.9477242296
0.2	.1191837821	.7102852778	.6232850020	.0639666168	28.0230247002	16.9623276793	11.7542071329	.9346118305
0.3	.1113652138	.6473033623	.6200281166	.0634267318	20.7845315319	13.1347350578	9.8431447561	.9182993161
0.4	.1046996525	.5876290016	.6161176743	.0629108324	15.5278734367	10.2006679203	8.3089680620	.8980470144
0.5	.0990059910	.5312221863	.6115765853	.0624074105	11.6950455794	7.9362144306	7.0663596448	.8730006471
0.6	.0941362415	.4780632810	.6064291842	.0619045121	8.8921663173	6.1783786137	6.0518616197	.8422213288
0.7	.0899685102	.4281440577	.6007017125	.0613899836	6.8384462075	4.8070674028	5.2176592983	.8047549108
0.8	.0864016222	.3814601738	.5944227587	.0608517462	5.3320198612	3.7328317581	4.5272945167	.7597542938
0.9	.0833509546	.3380047883	.5876236308	.0602780997	4.2267255208	2.8883939831	3.9526635185	.7066583351
1.0	.0807451869	.2977631451	.5803386351	.0596580506	3.4161092268	2.2227077948	3.4718842069	.6454073133
1.1	.0785237555	.2607080495	.5726052353	.0589816548	2.8222690667	1.6967386877	3.0677608074	.5766403216
1.2	.0766348511	.2267962299	.5644640714	.0582403608	2.3879875810	1.2804293951	2.7266648870	.5017919861
1.3	.0750338407	.1959656171	.5559588199	.0574273346	2.0711270797	.9504925862	2.4377103647	.4230135786
1.4	.0736820230	.1681335911	.5471358865	.0565377438	1.8406010462	.6887881640	2.1921386517	.3429034334
1.5	.0725456479	.1431962390	.5380439438	.0555689796	1.6734554764	.4811185046	1.9828556942	.2641188669
1.6	.0715951442	.1210286450	.5287332855	.0545207937	1.5527398560	.3163257654	1.8040799993	.1889980491
1.7	.0708045127	.1014861907	.5192550894	.0533953346	1.4659451438	.1856097750	1.6510725581	.1193050714
1.8	.0701508482	.0844067941	.5096605552	.0521970728	1.4038523166	.0820085736	1.5199277749	.0561418955
1.9	.0696139618	.0696139618	.5000000000	.0509326139	1.3596804131	.0000000000	1.4074102501	.0000000000
$\xi_1=-1.8$								
-1.3	1.2970255245	2.8153133923	.5634242644	.0802536656	28135.7045335187	9136.3696916289	2972.0736161822	.9991138652
-1.2	.9976093713	2.4537231132	.5731437633	.0791767723	12769.8323642658	4296.7368790895	1449.7299969822	.9986253786
-1.1	.7915934333	2.1842939655	.5818564112	.0780417214	6471.2011163148	2259.5799167288	792.1894745084	.9979774391
-1.0	.6433098410	1.9716508701	.5895737136	.0768801042	3351.0937258851	1288.7067262911	470.3690941558	.9971342608
-0.9	.5329795556	1.7962978327	.5963130254	.0757182470	2068.6767535220	781.4453208862	297.5370896127	.9960513368
-0.8	.4487714801	1.6466756955	.6020957836	.0745773814	1261.9758820693	496.9764737761	197.8152692732	.9946731549
-0.7	.3831911913	1.5155505000	.6069460282	.0734739733	798.3345328066	326.2511191814	136.8957710525	.9929302495
-0.6	.3312740463	1.3982069898	.6108892154	.0724201425	519.9216511924	223.5303348045	97.9083365883	.9907353996
-0.5	.2896113992	1.2914746955	.6139513082	.0714241184	346.6619910341	156.0601153801	71.9752180892	.9879787274
-0.4	.2557935701	1.1931721986	.6161581225	.0704906939	235.6267651598	111.2138480890	54.1555281377	.9845213979
-0.3	.2280753277	1.1017723778	.6175349000	.0696216532	162.7155224916	80.6116103514	41.5669185958	.9801875659
-0.2	.2051666125	1.0161968842	.6181060862	.0688161612	113.8588975387	59.2579542982	32.4590741132	.9747541744
-0.1	.1860970564	.9356751475	.6178952435	.0680711092	80.5618859738	44.0708716494	25.7316470449	.9679382325
0.0	.1701256547	.8596602985	.6169251979	.0673814187	57.5532975430	33.0913305791	20.6716774612	.9593813335
0.1	.1566789941	.7977644425	.6152181872	.0667403105	41.4647025271	25.0410778268	16.8047607576	.9486315707
0.2	.1453080943	.7197157027	.6127961958	.0661395473	30.1082085139	19.0665513827	13.8076929183	.9351238437
0.3	.1356575976	.6553268026	.6096813310	.0655696601	22.0299722998	14.5859483524	11.4555923240	.9181613660
0.4	.1274435352	.5944717343	.6058962595	.0650201715	16.2484811412	11.1953630298	9.5889989537	.8969023460
0.5	.1204367463	.5370679851	.6014664787	.0644798251	12.0913225002	8.6097496266	8.0928925322	.8703656308
0.6	.1144569461	.4830626295	.5964117980	.0639368309	9.0919335237	6.6249579530	6.8830108253	.8374632807
0.7	.1093331937	.4324211694	.5907648097	.0633791348	6.9229970358	5.0928263055	5.8967463967	.7970867071
0.8	.1049570551	.3851183692	.5845533138	.0627947157	5.3527070977	3.9045390319	5.0869773253	.7482610311
0.9	.1012169117	.3411307567	.5778096870	.0621719101	4.2155846281	2.9793188868	4.4178153237	.6903738058
1.0	.0980242663	.3004306947	.5705693506	.0614997603	3.3927150231	2.2566250296	3.8616296434	.6234482355
1.1	.0953039755	.2629783016	.5628709220	.0607683749	2.7981868602	1.6906929386	3.3969339921	.5482815419
1.2	.0929919403	.2287232557	.5547562244	.0599692884	2.3696732979	1.2466628154	3.0068662041	.4670331593
1.3	.0910330477	.1975956171	.5462701390	.0590957992	2.0618194758	.8978007578	2.6780808131	.3820698869
1.4	.0893795927	.1695066890	.5374602825	.0581432633	1.8415548698	.6234816329	2.3999330355	.2965731094
1.5	.0879930365	.1443474999	.5283765262	.0571093224	1.6847417756	.4077094469	2.1638709321	.2135346835
1.6	.0868280318	.1219888341	.5190703523	.0559940420	1.5737612531	.2380214035	1.9629779693	.1354218906
1.7	.0858616597	.1022823773	.5095940807	.0547999454	1.4957633126	.1046688373	1.7916255457	.0639384846
1.8	.0850628274	.0850628274	.5000000000	.0535319307	1.4413919480	.0000000000	1.6452062381	.0000000000
$\xi_1=-1.7$								
-1.2	1.3339498558	2.7542477530	.5594042055	.0805457276	24550.7774671025	8519.9075010418	2962.6741544090	.9989880697
-1.1	1.0323650914	2.3913364058	.5683611428	.0795732159	11079.8147632279	3992.7531069852	1443.3874640886	.9984234396
-1.0	.8243426201	2.1208797214	.5763755695	.0785485962	5580.8637068835	2091.7440086217	787.6662185256	.9976695466
-0.9	.6742127307	1.9074941289	.5833982522	.0775001042	3042.8612690947	1186.1231365465	467.0118056230	.9966816150
-0.8	.5621920823	1.7316735244	.5894650644	.0764511559	1760.5765546732	717.3235374676	294.0694842254	.9954033089
-0.7	.4764434650	1.5818480109	.5945954541	.0754205070	1066.3479388545	454.0935863108	195.8058585717	.9937635425
-0.6	.4094650946	1.4507728023	.5988111748	.0744225441	669.5251712088	298.4639299234	135.2945917268	.9916722951
-0.5	.3562841904	1.3337218548	.6021352797	.0734676500	432.6225741488	202.1984363348	96.6141914049	.9890151510
-0.4	.3134835539	1.2275147783	.6045913658	.0725675980	286.1088872349	140.3984335672	70.9171188791	.9856461879
-0.3	.2786448488	1.1299605818	.6062030479	.0717109461	192.8333562184	99.4764966489	53.2826087522	.9813787516
-0.2	.2500142764	1.0395238200	.6069936376	.0709134110	132.0136735786	71.6636364990	40.8415903540	.9759735805
-0.1	.2262934582	.9551158523	.6069860036	.0701682125	91.5633455243	52.3377786391	31.8533096001	.9691237204
0.0	.2065040520	.8759596556	.6062025861	.0694713863	64.2156752063	38.6534318926	25.2239961607	.9604357884
0.1	.1898974810	.8014995039	.6046655429	.0688170671	45.4767664732	28.8059685645	20.2436642426	.9494075503
0.2	.1758931912	.7313388846	.6023970035	.0681977506	32.4890873106	21.6206657203	16.4438424575	.9354027726
0.3	.1640354760	.6651966569	.5994194096	.0676045411	23.4105570744	16.3150453509	13.5030876819	.9176263417
0.4	.1539626924	.6028752637	.5957559184	.0671273969	17.0186780204	12.3571543652	11.1985542319	.8951062348
0.5	.1453849339	.5442370695	.5914308474	.0664553825	12.4940787081	9.3787150500	9.3723625717	.8666950860
0.6	.1380675966	.4891862775	.5864701362	.0658769371	9.2788847349	7.1205830877	7.9107357851	.8311113797
0.7	.1318190824	.4376547662	.5809017984	.0652801663	6.9884156662	5.3977306148	6.7304918575	.7870482257
0.8	.1264815976	.3895907479	.5747563399	.0646531617	5.3547437167	4.0763105228	5.7695509495	.7333763607
0.9	.1219240306	.3449495417	.5680671111	.0639843464	4.1895343524	3.0583576331	4.9817103166	.6694469326
1.0	.1180365496	.3036860139	.5608705688	.0632628434	3.3594299547	2.2714123097	4.3315251172	.5954465432
1.1	.1147263893	.2657484196	.5532064178	.0624788550	2.7694359777	1.6613747276	3.7918967689	.5126829046
1.2	.1119145755	.2310735046	.5451176167	.0616240387	2.3515698916	1.1875125127	3.3414383486	.4236356722
1.3	.1095333653	.1995828042	.5366501870	.0606918591	2.0570153114	.8189294857	2.9638683677	.3316639664
1.4	.1075242438	.1711801217	.5278529426	.0596778922	1.8506619909	.5320354512	2.6460142085	.2404270234
1.5	.1056363541	.1457501817	.5187769286	.0585800576	1.7071429115	.3087141201	2.3774545428	.1532376360
1.6	.1044252685	.1231584431	.5094747956	.0573987626	1.6082893721	.1347824115	2.1498280966	.0725927451
1.7	.1032520260	.1032520260	.5000000000	.0561369474	1.5405671236	.0000000000	1.9563814391	.0000000000

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-1.6$								
-1.1	1.3716491423	2.6939641470	.5553699907	.0808198497	21224.9705380767	7908.8968527329	2953.9191595509	.9988334100
-1.0	1.0680256799	2.3298683996	.5635954672	.0799451735	9519.3532677697	3692.4400036143	1437.4989731438	.9981733108
-0.9	.8581163493	2.0585141097	.5708603423	.0790239931	4762.9786654295	1926.5181201904	783.4815048720	.9972852727
-0.8	.7062497402	1.8445099558	.5771747305	.0780813468	2578.5340436992	1089.4694007322	463.9175176649	.9961121014
-0.7	.5926386539	1.6683407701	.5825532043	.0771378396	1480.7181132069	654.6705970412	292.6125933319	.9945809463
-0.6	.5054404231	1.5184269461	.5870134770	.0762097950	889.7311956578	412.3534463397	193.9693355259	.9925986565
-0.5	.4371466895	1.3875138293	.5905753275	.0753095133	553.9728879490	269.5808873072	133.8379430410	.9900456423
-0.4	.3827773836	1.2708656688	.5932597623	.0744455913	354.8282322047	181.5912680105	95.4425991991	.9867677636
-0.3	.3389076251	1.1652926987	.5950884049	.0736232660	232.5222575915	125.3234224048	69.9643525427	.9825656359
-0.2	.3031112530	1.0685949243	.5960830919	.0728447597	155.2370576915	88.2178640279	52.5010494374	.9771806186
-0.1	.2736266845	.9792282016	.5962656552	.0721096107	105.2445267785	63.1084559387	40.1961464229	.9702766607
0.0	.2491479295	.8960953407	.5956578680	.0714149843	72.2782231550	45.7412003128	31.3172652261	.9614172452
0.1	.2286892920	.8184106917	.5942815296	.0707559635	50.1936192870	33.5032840532	24.7767948600	.9500370901
0.2	.2114951499	.7456095460	.5921586688	.0701258219	35.2074936604	24.7416904817	19.8710187950	.9354094333
0.3	.1969782370	.6772857390	.5893118410	.0695162888	24.9327590715	18.3831530937	16.1323721659	.9166123778
0.4	.1846764714	.6131474779	.5857644968	.0689178128	17.8309440801	13.7147097856	13.2428012015	.8925026684
0.5	.1742221633	.5529852261	.5815413987	.0683198340	12.8920982200	10.2530513055	10.9813642320	.8617140608
0.6	.1653196706	.4966477376	.5766690605	.0677110737	9.4425866110	7.6645861361	9.1916591912	.8227090391
0.7	.1577289389	.4440237196	.5711761823	.0670798474	7.0268928962	5.7153257534	7.7610709038	.7739243233
0.8	.1512532135	.3950274842	.5650940539	.0664144056	5.3333641617	4.2387664222	6.6072520031	.7140496830
0.9	.1457297603	.3495875215	.5584568955	.0657033004	4.1466568469	3.1143902828	5.6691368339	.6424439380
1.0	.1410227903	.3076373059	.5513021094	.0649357741	3.3167507643	2.2561847657	4.9008577695	.5596057933
1.1	.1370180202	.2691079100	.5436704112	.0641021574	2.7384414065	1.5981789213	4.2675565790	.4675025974
1.2	.1336184645	.2339221714	.5356058190	.0631942624	2.3375752682	1.0929390697	3.7424556779	.3695173345
1.3	.1307411662	.2019902721	.5271554807	.0622057485	2.0616939587	.7045353458	3.3047808182	.2699102362
1.4	.1283146489	.1732066590	.5183693300	.0611324385	1.8736032554	.4058408792	2.9382660605	.1729701917
1.5	.1262769292	.1474482617	.5092995702	.0599725594	1.7469084645	.1762447840	2.6300773732	.0822236849
1.6	.1245739647	.1245739647	.5000000000	.0587268860	1.6628882718	.0000000000	2.3699929396	.0000000000
$\xi_1=-1.5$								
-1.0	1.4101289239	2.6344676616	.5513225247	.0810757247	18154.0688673074	7302.9452505102	2945.8049156880	.9986402454
-0.9	1.1046001341	2.2693272001	.5587882235	.0802920576	8085.6187291154	3395.5198773363	1432.0609336089	.9978583576
-0.8	.8929279927	1.9972089149	.5653129683	.0794669138	4015.5377975817	1763.6947688748	779.6313654248	.9967971256
-0.7	.7394394837	1.7827144342	.5709063119	.0786222750	2156.6327218584	992.5840583009	461.0828885118	.9953818055
-0.6	.6243439151	1.6063203776	.5755817083	.0777760259	1227.9808783155	593.3570851129	290.4632048110	.9935157769
-0.5	.5357937155	1.4564383208	.5793553948	.0769420979	731.2590235354	371.6499644880	192.3026212411	.9910735777
-0.4	.4662746256	1.3258045821	.5822454941	.0761307011	450.9969553636	241.5135568359	132.5228820042	.9878915514
-0.3	.4108000196	1.2096744173	.5842713352	.0753486059	285.9976253377	161.6341171315	94.3907583661	.9837552976
-0.2	.3659380815	1.1048492097	.5854529783	.0745994464	185.4684269198	110.7714101113	69.1142611181	.9783829040
-0.1	.3292555473	1.0091202481	.5858109280	.0738840268	122.4880449566	77.3830800588	51.8083386360	.9714027474
0.0	.2989837228	.9209347006	.5853660148	.0732006209	82.1247676121	54.8985627782	39.6282238944	.9623246139
0.1	.2738096096	.8391865328	.5841394230	.0725452606	55.7734959073	39.4268899583	30.8496283554	.9505032780
0.2	.2527406806	.7630808470	.5821528433	.0719120153	38.3107602119	28.5843372037	24.3906817266	.9350950801
0.3	.2350147046	.6920429947	.5794287277	.0712932675	26.5995839663	20.8668880551	19.5518311604	.9150114845
0.4	.2200380500	.6256558666	.5759906229	.0706799904	18.6725050355	15.3007947849	15.8685909037	.8888807802
0.5	.2073425199	.5636154041	.5718635579	.0700620375	13.2697017484	11.2411464753	13.0752242944	.8550419463
0.6	.1965545548	.5056981883	.5670744602	.0694284509	9.5699351575	8.2521521181	10.8025610754	.8116136669
0.7	.1873728796	.4517372205	.5616525723	.0687677937	7.0295992903	6.0340281726	9.0455730025	.7567004762
0.8	.1795520316	.4016034004	.5556298396	.0680685107	5.2841397604	4.3772472438	7.6427244458	.6887947516
0.9	.1728900638	.3551910888	.5490412396	.0673193161	4.0863841344	3.1332733926	6.5125265905	.6073708452
1.0	.1672192608	.3124067079	.5419250211	.0665096010	3.2672259932	2.1954674877	5.5946041330	.5135145357
1.1	.1623990639	.2731597158	.5343228262	.0656298513	2.7101306692	1.4864011369	4.8436501008	.4102556133
1.2	.1583106395	.2373555376	.5262796674	.0646720576	2.3343498987	.9492881065	4.2252657371	.3022651301
1.3	.1548526851	.2048902042	.5178437432	.0636300961	2.0837188990	.5421086650	3.7130530389	.1948952288
1.4	.1519381801	.1756465484	.5090660799	.0625300565	1.9190882341	.2335241844	3.2865535468	.0929852443
1.5	.1494918614	.1494918614	.5000000000	.0612804906	1.8131563561	.0000000000	2.9297675974	.0000000000
$\xi_1=-1.4$								
-0.9	1.4493944034	2.5757630398	.5472627272	.0813130639	15334.1770004983	6701.6637848647	2938.3279872250	.9983946936
-0.8	1.1420969140	2.2097203543	.5539609328	.0806133154	6776.0046661781	3101.7187384003	1427.0700303759	.9974541056
-0.7	.9287901403	1.9369751124	.5597357541	.0798764169	3336.7028608536	1603.0697789805	776.1141120423	.9961640620
-0.6	.7737995144	1.7221224897	.5645962808	.0791214190	1775.8104680640	897.3088184479	458.5048593201	.9944241405
-0.5	.6573311420	1.5456316068	.5685550391	.0783635665	1001.3505153503	533.2566151592	288.5183919432	.9921022563
-0.4	.5675330076	1.3959059511	.5716270564	.0776144362	590.1517853001	331.8800131435	190.8029242034	.9890237549
-0.3	.4968855153	1.2656734715	.5738291307	.0768821475	359.9888958767	214.1762351512	131.3467582455	.9849564953
-0.2	.4403961010	1.1501809439	.5751792976	.0761716140	225.6504910004	142.2548477725	93.4563364816	.9795904838
-0.1	.3946266409	1.0462212109	.5756964846	.0754848167	144.5652114463	96.6810442842	68.3644753954	.9725102605
0.0	.3571373736	.9515769044	.5754003352	.0748210822	94.2804548839	66.9195344004	51.2022523456	.9631580154
0.1	.3261530516	.8646862763	.5743111836	.0741773627	62.4007093378	46.9885502410	39.1357453685	.9507856981
0.2	.3003541615	.7844339043	.5724501607	.0735485139	41.8514612437	33.3554564983	30.4481689893	.9343960311
0.3	.2787417630	.7100147700	.5698394077	.0729275759	28.4079749158	23.8622788209	24.0629743291	.9126770378
0.4	.2605473522	.6408430782	.5665023745	.0723060606	19.5231316843	17.1515736217	19.2844659946	.8839453618
0.5	.2451711858	.5764892450	.5624641793	.0716742551	13.6057984157	12.3473113123	15.6510092935	.8461341186
0.6	.2321391244	.5166351225	.5577520010	.0710215448	9.6450017439	8.8712719911	12.8490118136	.7968927495
0.7	.2210718381	.4610413374	.5523954765	.0703367642	6.9872739175	6.3341384568	10.6609415205	.7338983094
0.8	.2116624510	.4095228876	.5464270742	.0696085756	5.2040532768	4.4691211512	8.9330398202	.6554681987
0.9	.2036600707	.3619305288	.5398824095	.0688258766	4.0108508271	3.0905108458	7.5547679535	.5614375457
1.0	.1968574952	.3181363588	.5328004735	.0679782266	3.2169380436	2.0672253834	6.4454291563	.4539840146
1.1	.1910819386	.2780225801	.5252237434	.0670562836	2.6934448798	1.3055890171	5.5452842644	.3378740272
1.2	.1861879730	.2414727839	.5171981496	.0660522318	2.3527934636	.7379187599	4.8095422317	.2193637075
1.3	.1820521201	.2083653481	.5087728785	.0649601774	2.1352426675	.3148345434	4.2042263957	.1050789465
1.4	.1785686868	.1785686868	.5000000000	.0637764894	1.9999592928	.0000000000	3.7032867342	.0000000000

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-1.3$								
-0.8	1.4894504380	2.5178546721	.5431915317	.0815315981	12761.7147126849	6104.6668259967	2931.4852049954	.9980759648
-0.7	1.1805239224	2.1510548333	.5491151485	.0809084310	5588.1283304007	2810.7656849565	1422.5232228259	.9969233652
-0.6	.9657145628	1.8778228136	.5541310702	.0802516231	2724.8018167705	1444.4420003997	772.9253334427	.9953226265
-0.5	.8093462561	1.6627478275	.5582480358	.0795774044	1434.8493370648	803.4882760996	456.1806501922	.9931342592
-0.4	.6916221315	1.4862920699	.5614778462	.0788984519	799.9154872085	474.2455431351	286.7755088275	.9901709394
-0.3	.6006860998	1.3368515004	.5638345995	.0782240234	465.7135058280	292.9429399948	189.4677349127	.9861795395
-0.2	.5290136898	1.2071461635	.5653341149	.0775601522	280.4094471181	167.4856638202	130.3071979768	.9808159984
-0.1	.4716069038	1.0924146579	.5659935382	.0769098773	173.3644582673	123.3836158994	92.6370134277	.9736103344
0.0	.4250218205	.9894413687	.5658311167	.0762734952	109.4792849023	82.9931095022	67.7129976831	.9639185296
0.1	.3868126674	.8960000891	.5648661274	.0756488230	70.3499048688	56.7765977849	50.6803464123	.9508580267
0.2	.3551980835	.8105196747	.5631189392	.0750314689	45.8860651358	39.3349366592	38.7169108745	.9332254911
0.3	.3288524133	.7318745164	.5606111887	.0744151132	30.3447215566	27.4891789223	30.1112314227	.9094020552
0.4	.3067706248	.6592483470	.5573660458	.0737918008	20.3521448999	19.3043133000	23.7921607303	.8772680684
0.5	.2881781563	.5920427748	.5534085452	.0731522540	13.8725821253	13.5671261005	19.0675540506	.8341837323
0.6	.2724693117	.5298139939	.5487659567	.0724862086	9.6493449551	9.4976431862	15.4783961387	.7771453225
0.7	.2591640919	.4722277643	.5434681638	.0717827792	6.8915785836	6.5830807862	12.7130744338	.7033063417
0.8	.2478774143	.4190265683	.5375480219	.0710308558	5.0934737058	4.4796329390	10.5555524735	.6109348654
0.9	.2382967675	.3700051111	.5310416620	.0702195278	3.9271769434	2.9527548772	8.8532396784	.5007674272
1.0	.2301657550	.3249917259	.5239887083	.0693385308	3.1778813120	1.8399647410	7.4965111126	.3769737151
1.1	.2232718210	.2838341127	.5164323784	.0683787010	2.7036795491	1.0271627989	6.4053952334	.2468247512
1.2	.2174370037	.2463884044	.5084194397	.0673324202	2.4102710137	.4332567452	5.5207345442	.1187719704
1.3	.2125109102	.2125109102	.5000000000	.0661940286	2.2347785320	.0000000000	4.7982089710	.0000000000
$\xi_1=-1.2$								
-0.7	1.5303015314	2.4607465889	.5391098849	.0817310779	10433.4132714057	5511.5717562520	2925.2735697719	.9976518461
-0.6	1.2198884871	2.0933370150	.5442524535	.0811769266	4519.8260928094	2522.3927046672	1418.4177424478	.9962073959
-0.5	1.0037121745	1.8197612321	.5485013462	.0805917188	2178.3253850380	1287.6130308932	770.0628919981	.9941705383
-0.4	.8460949393	1.6046028745	.5518650810	.0799889607	1132.6570141931	710.9696334428	454.1077567242	.9913394343
-0.3	.7272370962	1.4283176383	.5543549532	.0793788266	622.8639779877	416.2026878862	285.2321861355	.9874361161
-0.2	.6352787676	1.2792943383	.5559844293	.0787682913	357.3290346764	254.7404885967	188.2948210427	.9820743575
-0.1	.5626909663	1.1502453796	.5567687152	.0781613139	211.7858671245	161.3607509377	129.4021085503	.9747174521
0.0	.5044706534	1.0364012642	.5567244910	.0775590564	128.7725982420	104.9525930612	91.9308356149	.9646079569
0.1	.4571685021	.9345377635	.5558697989	.0769601239	79.9238752867	69.6502541518	67.1577453686	.9506844363
0.2	.4183330933	.8424193993	.5542240672	.0763608231	50.4713958712	46.9053530010	50.2424497171	.9314602957
0.3	.3861772699	.7584648927	.5518082515	.0757554374	32.3800348695	31.8954015845	38.3701907837	.9048820209
0.4	.3593695021	.6815373898	.5486450703	.0751365259	21.1144614185	21.7917484109	29.8376269929	.8682032107
0.5	.3368988266	.6108079980	.5447593110	.0744952162	14.0346191153	14.8789108772	23.5769971854	.8179497561
0.6	.3179847736	.5456640535	.5401781778	.0738216003	9.5633736637	10.0860473967	18.8999849447	.7502132203
0.7	.3020157370	.4856455929	.5349316548	.0731050628	6.7378964357	6.7277152869	15.3497863778	.6615371996
0.8	.2885058498	.4304001521	.5290528488	.0723347164	4.9597066075	4.3554179571	12.6165719419	.5505926012
0.9	.2770642178	.3796498242	.5225782827	.0714998390	3.8512987379	2.6699805372	10.4856846703	.4201516711
1.0	.2673725995	.3331667746	.5155481022	.0705903373	3.1717834460	1.4684191014	8.8055910419	.2778555048
1.1	.2591689782	.2907547925	.5080061677	.0695972194	2.7661249130	.6109408510	7.4674965922	.1344236721
1.2	.2522353267	.2522353267	.5000000000	.0685130583	2.5339857157	.0000000000	6.3920879261	.0000000000
$\xi_1=-1.1$								
-0.6	1.5719518262	2.4044424536	.5350187453	.0819112748	8346.3119925872	4921.9987544292	2919.6907533787	.9970702650
-0.5	1.2601973433	2.0365726682	.5393744585	.0814183648	3569.1501614699	2236.3343986491	1414.7510902207	.9952090471
-0.4	1.0427929996	1.7627986533	.5428490662	.0808959601	1695.9239393355	1132.3869436203	767.5244214937	.9925343971
-0.3	.8840595405	1.5476987262	.5454510179	.0803549289	868.2636887727	619.6024257867	452.2839467325	.9887389735
-0.2	.7641945655	1.3717223563	.5471913435	.0798030032	469.4811504226	359.0090571776	283.8863273455	.9833861491
-0.1	.6713346092	1.2232514129	.5480831964	.0792449130	264.4614804968	217.1764252093	187.2822231045	.9758562772
0.0	.5979464268	1.0949907149	.5481415563	.0786825671	153.7095680981	135.7222997382	128.6296686200	.9652286037
0.1	.5390222178	.9821625169	.5473830841	.0781152667	91.5611481546	86.8956977159	91.3361206036	.9502138996
0.2	.4911075210	.8815335731	.5458261137	.0775399468	55.6567789046	56.5567254049	66.6974452770	.9289186247
0.3	.4517455108	.7908584428	.5434907628	.0769514411	34.4575143954	37.2583344175	49.8856592637	.8986562719
0.4	.4191434267	.7085447144	.5403991415	.0763427731	21.7456920150	24.6295306861	38.0943197249	.8557352238
0.5	.3919639942	.6334429776	.5365756354	.0757054758	14.0490146988	16.2280193481	29.6256273274	.7954425182
0.6	.3691904044	.5647101056	.5320472346	.0750299440	9.3699552000	10.5555653874	23.4164770410	.7126100856
0.7	.3500362753	.5017172895	.5268438810	.0743058224	6.5308460753	6.6817274137	18.7800012204	.6033172517
0.8	.3338840491	.4439863303	.5209987994	.0735224292	4.8233185910	4.0142095093	15.2644454291	.4678283602
0.9	.3202418977	.3911443371	.5145487803	.0726692133	3.8144176661	2.1677597658	12.5589079457	.3131995218
1.0	.3087129902	.3428907938	.5075343793	.0717362346	3.2362768429	.8870370898	10.4508679197	.1525256088
1.1	.2989732134	.2989732134	.5000000000	.0707146551	2.9217645208	.0000000000	8.7897466545	.0000000000
$\xi_1=-1.0$								
-0.5	1.6144050970	2.3489455558	.5309190823	.0820719810	6497.7550337397	4335.5704175090	2914.7343023507	.9962425915
-0.4	1.3014566176	1.9807669383	.5344827988	.0816323497	2734.3656301561	1952.3277142042	1411.5210356908	.9937582536
-0.3	1.0829661409	1.7069424061	.5371767641	.0811636764	1276.4047274664	978.5700168155	765.3078245258	.9901012695
-0.2	.9232527260	1.4920450973	.5390095359	.0806742685	640.8204546957	529.2382518086	450.7072574133	.9847721720
-0.1	.8025112936	1.3165183640	.5399921440	.0801694746	339.1467285655	307.5475785860	282.7361053709	.9770329934
0.0	.7088749057	1.1687371345	.5401377707	.0796518248	186.6499779779	180.1562912252	186.4282606186	.9657830944
0.1	.6348067140	1.0413984762	.5394615798	.0791212154	105.8340684383	110.4927433926	127.9883249047	.9493707202
0.2	.5752928229	.9297160048	.5379806817	.0785751230	61.4677480510	69.1483332440	90.8514525655	.9253203798
0.3	.5268752850	.8304468003	.5357142189	.0780088617	36.4786799440	43.7781112677	66.3307288317	.8899796556
0.4	.4870914817	.7413345091	.5326835518	.0774159172	22.1569318727	27.7892748364	49.6093301681	.8381866146
0.5	.4541431144	.6607743325	.5289125213	.0767881151	13.8686583825	17.4975680980	37.8882915049	.7633223103
0.6	.4266871744	.5876027546	.5244277624	.0761161519	9.0627069813	10.7637677553	29.5743673140	.6585802039
0.7	.4037009625	.5209605985	.5192590377	.0753898949	6.2949270266	6.3045592664	23.3098758446	.5204624497
0.8	.3843920878	.4602008817	.5134395589	.0745988375	4.7294035581	3.3282159839	18.7096237206	.3538139695
0.9	.3681369028	.4048250050	.5070062620	.0737325695	3.8739307497	1.3343438556	15.2218349381	.1727637399
1.0	.3544374526	.3544374526	.5000000000	.0727812737	3.4349495044	.0000000000	12.5397261212	.0000000000

TABLE I. ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES (Continued)

ξ_2	$Z_1(\xi_1,\xi_2)$	$Z_2(\xi_1,\xi_2)$	$H_1(\xi_1,\xi_2)$	$H_2(\xi_1,\xi_2)$	$\mu_{11}(\xi_1,\xi_2)$	$\mu_{12}(\xi_1,\xi_2)$	$\mu_{22}(\xi_1,\xi_2)$	$\rho(\hat{\mu},\hat{\sigma})$
$\xi_1=-0.9$								
-0.4	1.6576647439	2.2942588063	.5268118752	.0822130109	4885.3889015007	3751.9116003251	2910.4015895968	.9950079876
-0.3	1.3436718138	1.9259243342	.5295791326	.0818185287	2013.9478426597	1670.1116759766	1408.7256142123	.9915353385
-0.2	1.1242397505	1.6521988381	.5314870177	.0813942734	918.7294146367	825.9704672058	763.4112703957	.9862600121
-0.1	.9636858010	1.4376502787	.5325444029	.0809460639	449.5950313726	439.7305074366	449.3759927819	.9782974282
0.0	.8422021759	1.2627158279	.5327626089	.0804769261	231.3328985651	246.7028347409	281.7799596056	.9662742110
0.1	.7479184900	1.1157632752	.5321552148	.0799872455	123.5077691199	143.5871404896	185.7314787946	.9480377912
0.2	.6732933450	.9894815423	.5307380024	.0794749628	67.8732540537	85.5958351679	127.4767385552	.9202122172
0.3	.6133097949	.8790749693	.5285290213	.0789358096	38.2798304458	51.6471316946	90.4756783077	.8775973046
0.4	.5645034316	.7812900491	.5255487558	.0783635825	22.2317655208	31.1410886195	66.0565780181	.8126223782
0.5	.5244068288	.6938583090	.5218203713	.0777504569	13.4531909309	18.4528584610	49.4125815567	.7157019913
0.6	.4912160885	.6151610661	.5173700149	.0770873436	8.6640563031	10.4606748681	37.7513550419	.5784060122
0.7	.4635823567	.5440189352	.5122271384	.0763642895	6.0949773699	5.3654556720	29.3848101552	.4009212889
0.8	.4404768877	.4795547051	.5064248133	.0755709208	4.7677888630	2.0967341986	23.2566976712	.1991181496
0.9	.4211010880	.4211010880	.5000000000	.0746969264	4.1319233606	.0000000000	18.6859282768	.0000000000
$\xi_1=-0.8$								
-0.3	1.7017337870	2.2403847311	.5226981119	.0823342008	3507.1593624166	3170.6490993207	2906.6914123236	.9930496592
-0.2	1.3868477994	1.8720487168	.5246651377	.0819765934	1406.5800810450	1389.4271229326	1406.3631262421	.9878813930
-0.1	1.1666210043	1.5985732935	.5257824440	.0815872363	622.0119437561	674.3981861306	761.8331933965	.9796864152
0.0	1.0053686633	1.3845210996	.5260594546	.0811695303	293.9717998084	350.9341230684	448.2867215017	.9667047598
0.1	.8832801741	1.2103228828	.5255081015	.0807242458	145.6025211725	191.3608023411	281.0165934073	.9460248692
0.2	.7884816378	1.0643388834	.5241427544	.0802496931	74.7205917351	107.3772808182	185.1907457255	.9128146684
0.3	.7134275467	.9392492496	.5219802701	.0797419391	39.5999412433	60.9566431271	127.0940321267	.8592334833
0.4	.6530963346	.8302481604	.5190401451	.0791950686	21.8333647927	34.3297023129	90.2079943002	.7735482452
0.5	.6040185295	.7340703550	.5153447497	.0786014921	12.7986277964	18.6331761532	65.8742321535	.6417226999
0.6	.5637212563	.6484337910	.5109196181	.0779522994	8.2637701398	9.2044787591	49.2947933733	.4560470012
0.7	.5303948319	.5717041831	.5057937659	.0772376639	6.0757300101	3.4805921586	37.6830113118	.2300282120
0.8	.5026843316	.5026843316	.5000000000	.0764472927	5.1097296725	.0000000000	29.3548305811	.0000000000
$\xi_1=-0.7$								
-0.2	1.7466148613	2.1873254672	.5185787881	.0824354095	2361.3098737174	2591.4113999112	2903.6019915178	.9896721078
-0.1	1.4309887944	1.8191432690	.5197425090	.0821062810	911.1515657365	1110.0164451823	1404.4321358569	.9812591534
0.0	1.2101160788	1.5460700938	.5200656930	.0817421320	385.5167086626	523.6644778543	760.5722911724	.9670774633
0.1	1.0483097634	1.3326628960	.5195585842	.0813440187	173.4491488421	262.7053035356	447.4442750124	.9430034381
0.2	.9257562509	1.1593455826	.5182340758	.0809105333	81.6076504846	136.4085943430	280.4449719883	.9016800635
0.3	.8305779640	1.0144702162	.5161077479	.0804379999	40.0453691477	71.4360190073	184.8051500888	.8303937246
0.4	.7552251156	.8907073045	.5131980102	.0799207221	20.8447347145	36.5007985444	126.8392871560	.7098674838
0.5	.6946713252	.7832397321	.5095263276	.0793512803	12.0118800998	17.1343838928	90.0474940079	.5209873557
0.6	.6454418301	.6887890737	.5051175049	.0787208823	8.1014464477	6.2024911315	65.7831854628	.2686751001
0.7	.6050580394	.6050580394	.5000000000	.0780197678	6.5394206653	.0000000000	49.2555590970	.0000000000
$\xi_1=-0.6$								
-0.1	1.7923102119	2.1350827589	.5144549060	.0825165190	1446.3794266996	2013.8284140414	2901.1320205323	.9830997827
0.0	1.4760983610	1.7672105875	.5148129559	.0822073750	526.7557688183	831.6233229857	1402.9314696187	.9673948740
0.1	1.2547301320	1.4946925226	.5143394420	.0818586115	208.6570371752	373.5817999402	759.6275233995	.9383586160
0.2	1.0925160701	1.2820794849	.5130457314	.0814690199	87.6383276135	174.9012704190	446.8417460087	.8838306400
0.3	.9696393149	1.1097878635	.5109460572	.0810351066	39.0883544012	81.7342047573	280.0643207304	.7811802512
0.4	.8742183434	.9661606891	.5080576542	.0805513234	19.3091961767	35.6734086416	184.5740493594	.5975540458
0.5	.7986988021	.8438577233	.5044009807	.0800103545	11.4951755973	12.1547472085	126.7120423440	.3184778117
0.6	.7380491805	.7380491805	.5000000000	.0794034607	8.7457705042	.0000000000	89.9940662273	.0000000000
$\xi=-0.5$								
0.0	1.8388216908	2.0836579544	.5103274728	.0825774345	761.2010635840	1437.5312202084	2899.2804553717	.9676593075
0.1	1.5221793952	1.7162524756	.5098781993	.0822797064	252.6890372503	553.9924671880	1401.8602158260	.9308041346
0.2	1.3004672866	1.4444428136	.5086063899	.0819364114	90.9939809991	223.9635052892	758.9981107662	.8522177505
0.3	1.1379930420	1.2327731455	.5065248706	.0815441677	36.2624009123	87.3800062325	446.4804872619	.6867745162
0.4	1.0149361771	1.0616515173	.5036496220	.0810975081	17.8718331494	27.2262554730	279.8741239236	.3849656602
0.5	.9194108454	.9194108454	.5000000000	.0805891546	12.4086175733	.0000000000	184.4970585327	.0000000000
$\xi_1=-0.4$								
0.0	2.3694892136	2.5668370221	.5066304788	.0828634816	1193.0175251205	2808.9846918579	7060.1732635124	.9678727912
0.1	1.8861507533	2.0330520032	.5061975003	.0826180846	304.9006433790	862.1518025907	2898.0465131703	.9171743369
0.2	1.5692341199	1.6662701386	.5049399688	.0823231538	88.4495238972	276.8693605435	1401.2177237112	.7864558312
0.3	1.3473306173	1.3953221415	.5028692511	.0819753556	32.2354101369	74.6235854046	758.6835341610	.4771766481
0.4	1.1847446068	1.1847446068	.5000000000	.0815692415	19.1555048345	.0000000000	446.3601107719	.0000000000
$\xi_1=-0.3$								
0.0	3.2345281600	3.3834065691	.5037386366	.0830752368	2126.2065716709	6661.5317128517	22271.9788660047	.9680370260
0.1	2.4178369846	2.5165107838	.5033155020	.0828831724	354.7482174514	1404.2047627987	7058.7272120128	.8873748821
0.2	1.9342984559	1.9832654545	.5020660029	.0826384215	76.8959183311	287.3227921985	2897.4296724289	.6087121671
0.3	1.6172640800	1.6172640800	.5000000000	.0823376444	33.7364251509	.0000000000	1401.0036030246	.0000000000
$\xi_1=-0.2$								
0.0	4.9336882098	5.0333553230	.5016644344	.0832206149	4792.7693421829	22491.8155379250	112609.2805739176	.9681533596
0.1	3.2836573156	3.3332834408	.5012462494	.0830826721	355.1029032819	2220.3397155765	22270.2648864874	.7895499756
0.2	2.4668441049	2.4668441049	.5000000000	.0828897377	75.4013726417	.0000000000	7058.2452383360	.0000000000
$\xi_1=-0.1$								
0.0	9.9667110899	10.0166694372	.5004165276	.0833054548	19192.7067055674	179983.0512569961	1800430.7131982153	.9682227667
0.1	4.9833555450	4.9833555450	.5000000000	.0832222752	300.4003429333	.0000000000	112607.3521304523	.0000000000

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AUXILIARY ESTIMATING FUNCTIONS FOR DOUBLY TRUNCATED NORMAL SAMPLES

By J. David Lifsey

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