

Full Length Research Paper

Margins and economic viability of fresh coconut marketing in the Kumasi metropolis of Ghana

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The study was conducted in the Kumasi metropolis of the Ashanti region of Ghana to examine the margins and economic viability of fresh coconut marketing. Cross-sectional data was randomly collected from 120 individual fresh coconut marketers in market centers across the metropolis and analyzed, using Deconstructed Marketing Margins and Return on Capital Employed. The study revealed that fresh coconut marketing in the Kumasi metropolis is a viable venture that employs people within the economically active age group. Actors in the market have very low educational background with some having no formal education. It has been identified as a safe net for school drop outs, proving meaningful employment for them. Fresh coconut marketing has been found as a lucrative venture to economically empower both men and women to improve their livelihoods. With a minimum of GH¢18.00, as a start-up capital, one can enter into this venture and receive proportionate returns. Actors in the market receive rates of returns several times higher than fixed-deposit interest rate in the Ghanaian economy because they can turn over their relatively low capital several times in the year to accrue more profit. Retailing, though needs a very small start-up capital, is the most profitable level along the distribution channel. Transporting and distributing fresh coconut from the production centre to the consumer market is more profitable than rationing them to retailers and wholesalers in the marketplace.

Key words: Economic viability, deconstructed market margin, sedentary wholesaler, itinerant wholesaler.

INTRODUCTION

Coconut (*Cocos nucifera*) is the most extensively grown and used nut in the world and the most important palm. It is an important commercial crop in many tropical countries, contributing significantly to their economies (Phillips, 1994). Coconut contributes 1.2 to 2.6% exclusively to the Gross National Product (GNP) in the producing countries. (Australian centre for International Agricultural Research, 1995).

In Ghana, it is the most important cash crop along the coastal belt. It is estimated that there are 17,000 farmers growing coconut on 43,000 hectares and producing a total of 224,000 tons of coconuts (Wahwa and Kumar, 1992). According to Adams et al. (1996), the coconut

industry in Ghana is worth at least 12.83 billion Cedis (US\$8.04 million) which is approximately 1.7% of the total 1995/98 agricultural exports. An important characteristic of coconut is its ability to spread wealth and generate employment in rural areas where few other opportunities exist. The industry provides employment (formal and non-formal) for at least 762,000 people in Ghana. However, the coconut market in Ghana is fragmented and has not received much significance due to lack of agricultural policy on the promotion of coconut marketing and consumption of coconut products (Yeboah, 2009). A lot of information is available on the production of coconut both globally and domestically. Coconut production in Ghana has increased considerably over the past decades.

In 1981, Ghana produced 160,000 (MT), 220,000 (MT) in 1993 and 223,977(MT) in 2000 (FAO, 1993; Gyimah, 2001). Consumption of fresh coconut over the past

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decades has received paramount importance because of its nutritional and medicinal value. The fruit can protect the body against various cancers including, breast and colon malignancies. Due to its effects on insulin secretion, coconut can help reduce diabetes-related symptoms. It is considered as a quick source of energy; coconut is used to improve physical performance and also promotes weight loss by increasing the metabolic rate (Coconut Development Board, 2008). It is reported that most people consume fresh coconut because of its natural medicinal and nutritional value. It is estimated that about 15% of the total coconut produced in the country is consumed fresh (Yeboah, 2009).

Farmers are naturally inclined to believe that many current systems of marketing are costly in relation to the services provided and traders absorb too high a proportion of the final price paid by consumers (Whiethan, 1972). Consumers also believe that excessive profiteering activities of traders are responsible for high prices of fresh coconut. There is the tendency to casually compare the price of fresh coconuts in the producing areas to prices in urban markets and conclude that traders are making too much profit, without giving much thought to the costs of getting coconut to consumers from producers. Gyimah (2001) observed that high market price of fresh coconuts could not be wholly attributed to excessive profiteering activity of middlemen, but scarce, expensive production and distributing factors are also responsible for high consumer price of fresh coconuts.

He estimated that, over 50% of the marketing margin in fresh coconut is attributed to actual marketing costs. Yeboah (2009) established that, fresh coconut farmers in the western region received about 46% of consumer price, 26% accounted for transportation and handling charges and the remaining 28% was the traders' profit margin.

As a result, low prices at the farm gate and high prices in the consumer market are generally blamed on inefficiency in the marketing system and exploitation by traders (Punchihewa, 1991). Potential investors in this industry, consumers, as well as policy makers need to answer many questions in their minds by knowing the marketing margins and economic viability of the market. It is therefore, imperative to examine the margins and economic viability of fresh coconut marketing in the Kumasi metropolis of Ghana.

METHODOLOGY

Data collection

The study was conducted in the Kumasi metropolis. A reconnaissance survey conducted in the metropolis in the first week of January, 2010 revealed three categories of fresh coconut marketers - itinerant wholesalers, sedentary wholesalers and retailers. A fourth category which was found only in the production centers is the local assemblers. Greater volume of fresh coconuts entering the metropolis is handled at Cross market. Other

markets of importance are Roman Hill, Suame Roundabout, Asafo, Sofo line, Bantama, Aboabo, Ahodwo, Atonsu, Kurofoforomu, Kwadaso, Asawasi, and Akwatialine markets. Retailing of fresh coconut in the Kumasi metropolis is usually seen on pavements of streets, school parks and at the entrances of most major and minor market centres. Fresh coconut retailing is done in open air, with fresh coconuts packed on truck, wheelbarrow and at times a retailer carries specific amount of fresh coconuts on a pan and hawk from house to house.

Since actors in the markets were not many, cluster sampling technique was adopted to interview all coconut sellers in each of the marketing centers selected in the metropolis. This was done to ensure a higher degree of confidence and a smaller margin of error in the study. The list of all marketers in each marketing centre was collected and used to facilitate enumeration to ensure effective coverage of the target, especially the itinerant wholesalers who were not stable. Call-back interviews were conducted until the entire target was covered.

A questionnaire was used to extract information from 120 individual marketers of their annual values of marketing costs, revenues and prices of the previous year, their socio-economic background and the channel of fresh coconut distribution. The questionnaire, which was made up of both open-ended and close-ended questions, was pre-tested and the necessary adjustment made to ensure accurate data collection. Questionnaires were administered from 20th to 31st January, 2010. Table 1 depicts the sample size distribution over the selected market centers.

Conceptual framework

The objective of this study is to determine the magnitude of margins between producer and marketers along the distribution channel and the economic viability of fresh coconut marketing. To achieve this, Deconstructed Marketing Margin and Return on Capital Employed (RoCE) were used for analyzing data.

Marketing margin, according to Shepherd (1996), is the percentage of the final weighted average selling price taken by each stage of the marketing chain. Moreover, this analysis is to determine the cost components of the margins and their contribution to the consumer price. Marketing margins has also been expressed by Abbott and Makeham (1990) as the difference between purchase price and re-sale price of a commodity. This convention was employed in calculating the margins. Functional margins were determined by calculating the cost of performing the different marketing functions along the marketing chain. Proportion of traders' profits of the consumer price was also computed. Marketing margin (Mm) was computed as the difference between costs of purchasing coconut per year (Cc) and revenue derived from sale of fresh coconut per year (Rc),

$$\frac{\sum}{\dots \dots \dots \dots \dots \dots \dots}$$

To, at least break even, the revenue from the sale of fresh coconut should encompass the cost of purchasing fresh coconut, marketing cost (Mc) and traders' profit margin (Pm).

$$\frac{\sum}{\dots \dots \dots \dots \dots \dots \dots}$$

Equations 1 and 2 gives Equation 3, as a model for deconstructed marketing margins along the market chain.

$$\frac{\sum}{\dots \dots \dots \dots \dots \dots \dots}$$

The marketing margin must cover costs involved in transferring

Table 2. Age of fresh coconut marketers.

Age group	Age range	Frequency	Percent
Dependent/school dropout	< 18	14	11.7
Active labor force	18 – 40	94	78.3
Less active labor force	41 - 60	10	8.3
Retiring labor force	> 60	2	1.7
Total	Total	120	100

Source: Survey data, 2010.

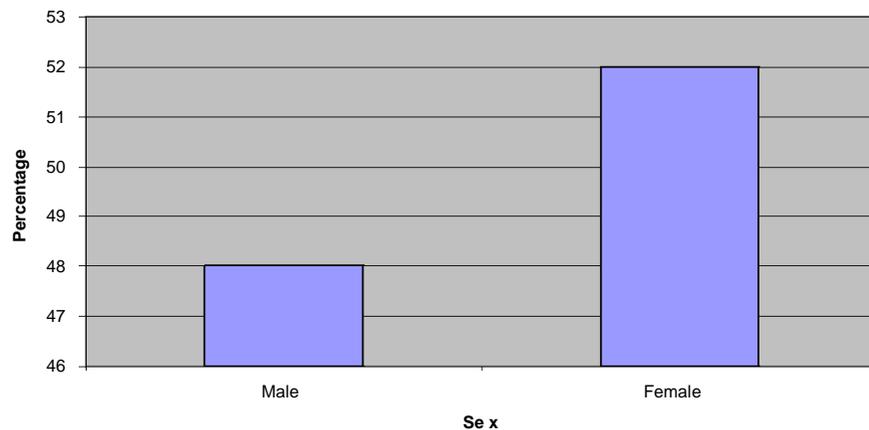


Figure 1. Sex distribution of fresh coconut marketers. Source: Survey data, 2010.

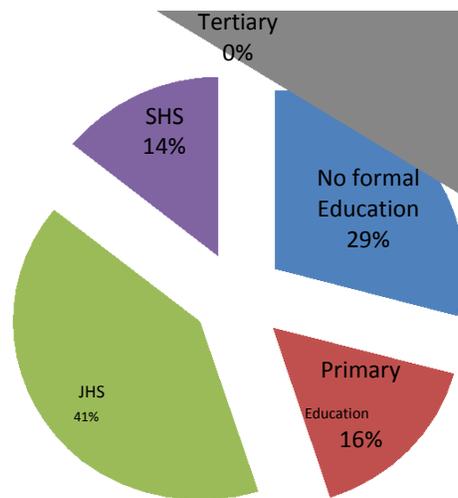


Figure 2. Educational level of fresh coconut marketers. Source: Survey data, 2010.

formal education. While 16% had formal education up to the primary school level, majority obtained up to Junior High School (JHS) and the remaining 14% had some secondary education. Fresh coconut marketing was found to provide livelihoods for school drop outs, since majority 45% of the traders had below primary education. Those who could not cross Junior High School (JHS) and

Senior High School (SHS) to vocational and tertiary institutions constituted 55% which have been absorbed by fresh coconut marketing.

Fresh coconut marketing has been an informal business over many decades. As can be seen in Table 3, very few (10%) have been in the business for over 10 years. The business has however, become attractive to

Table 3. Experience in fresh coconut marketing.

Experience(in years)	Frequency	Percentage
<1	14	12
1-10	94	78
11-20	10	8
>20	2	2
Total	120	100

Source: Survey data, 2010.

many (90%) over the last decade.

Distribution channel of fresh coconut

The marketing channel is made up of various individuals who handle fresh coconut as it moved through the marketing processes. The channels are the routes through which fresh coconut flow from the producer to the ultimate consumer. Fresh coconut marketed in Kumasi metropolis generally passed through three group actors along the chain of distribution. These are the itinerant wholesalers, sedentary wholesalers and the retailers. The itinerant wholesalers handled a greater volume of fresh coconut. Table 4 is a summary of the flow of fresh coconut to the various actors along the channel.

Fresh coconuts passed through one or more of the indicated actors before it reached the consumers. Majority of the retailers obtained fresh coconut supply from the sedentary wholesalers who assemble fresh coconut in the metropolis from the itinerant wholesalers. Quite a larger portion (23%) obtained supply from itinerant wholesalers who assembled and transported fresh coconut from the production centers. Very few (2%) obtaining coconut from producers. Most of the sedentary wholesalers (72%) obtained fresh coconut from itinerant wholesalers with little supply from producers (20%) and other sedentary wholesalers (8%). Itinerant wholesalers, on the other hand, mainly assembled fresh coconut from the producers (92%) for onward distribution into the consumer market. The observation has been translated into a web of distribution channels presented in Figure 3.

The web of fresh coconut distribution channel was a mix of short and long chains of distribution. The itinerant wholesalers transport fresh coconut from Edina, Komendda, Cape coast, Assin Fosu and Eguafo in the Central Region and Jomoro in the Western Region.

Deconstructed marketing margins along the distribution channel

The annual marketing margin at the retail level, as depicted in Table 5 was GH¢7128.00 with a profit margin of GH¢6318.00, which is a retailer's returns to labour per year representing 88.7% of the marketing margin. This is achievable because they were able to turn over their

capital 52 times in a year. Major cost items of the retail marketing margin were transaction cost, cost of working capital, depreciation of fixed asset and opportunity cost of the trader representing 6.3, 0.1, 0.2 and 4.8% of the marketing margin respectively. The volume of fresh coconut sold annually at the retail level (831,000 bags) as is evident in Table 6, was higher than that sold at the sedentary wholesaler level. This is because retailers bought coconut also from the itinerant wholesalers and the producers as well, as is depicted in Figure 3. Itinerant wholesalers handled the greatest volume of fresh coconut because they supplied to both retailers and sedentary wholesalers. They could turn over their capital 24 times a year. As can be seen in Table 7, the retailers priced their coconut higher at GH¢0.50 per coconut compared to GH¢0.30 and GH¢0.25 at the sedentary wholesaler and itinerant wholesaler levels, respectively and making the highest price margin of GH¢0.20. This, coupled with low transaction cost and the fact that, they were able to turn over their working capital 52 times a year has made retailers reap the highest profit margin which is 88.7% of the retail marketing margin.

The annual marketing margin at the sedentary wholesaler level is GH¢1134.30 with a profit margin of GH¢340.24, which represented 30% of the marketing margin. The cost items at this level are transactional cost, cost of working capital, depreciation of fixed asset and opportunity cost of the trader representing 23.2%, 4.0%, 1.1% and 41.7% of the marketing margin respectively. The volume of fresh coconut sold annually by the sedentary wholesalers (360,000 bags), as is evident in Table 6, is lower than that sold by the retailers. This might be due to the reason that, they could turn over their working capital 18 times in a year. Table 7 indicates that, the sedentary wholesalers priced their coconut lower at GH¢0.30 compared to GH¢0.50 at the retailer level. The lower sedentary wholesaler margin is due to a very low profit component and relatively low transaction cost which is probably due to the provision of very few marketing services.

The itinerant wholesale margin is GH¢7453.20, with a profit component of GH¢5326.19, which represents 71.5% of the marketing margin. At this level, transaction cost, cost of working capital, depreciation of fixed asset and opportunity cost of the trader represents 20.4%, 2.4%, 0.00% and 5.70% of the itinerant wholesale margin, respectively. The volume of fresh coconut sold annually at this level (1325, 551 bags), as is evident in Table 6, is higher than that sold at the retailer's and resident wholesaler's level. As is evident in Table 7, the itinerant wholesale price margin of GH¢0.15, is three times that of the sedentary wholesaler. As a result, the itinerant wholesaler, though incurred almost six times the transaction cost of the sedentary wholesaler, the former made a profit margin which is almost fifteen times that of the latter. The high marketing margin at the itinerant wholesaler level was due to a very high profit component

Table 4. Flow of fresh coconut supply.

Source of fresh coconut	Type of trader					
	Retailer		Sedentary wholesaler		Itinerant wholesaler	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Producer	1	2	8	20	37	92
Itinerant wholesaler	9	23	29	72	3	8
Sedentary wholesaler	30	75	3	8	0	0
Total	40	100.0	40	100.0	40	100.0

Source: Survey data, 2010.

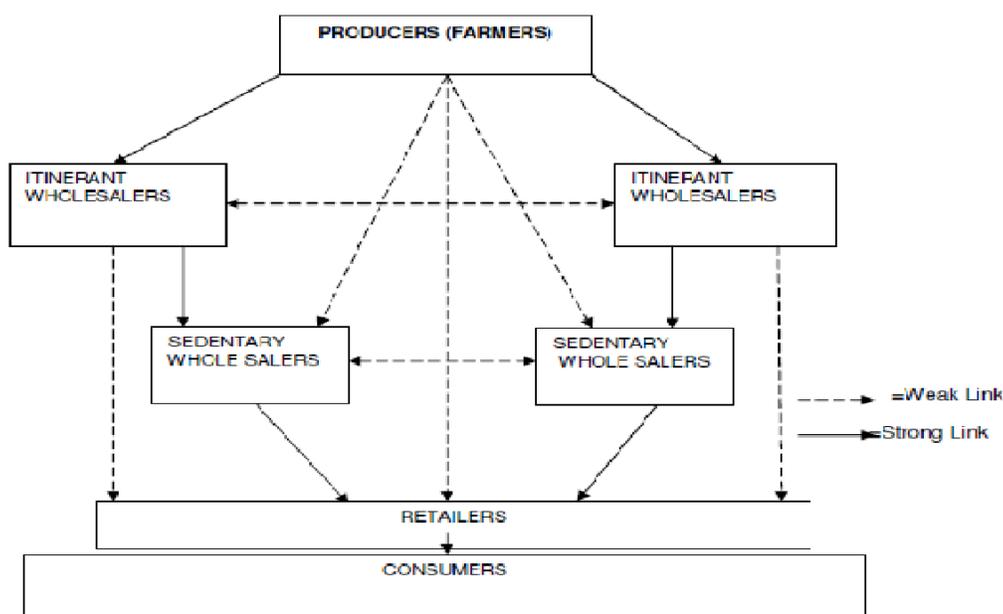


Figure 3. Distribution channel of fresh coconut. Source: Author's construct.

that resulted from high price margin. The results show that, profit margins earned by the traders who deal in fresh coconut was generally higher. Moreover, the profit of retailers and itinerant wholesalers were higher than that of sedentary wholesalers. According to Kohls and Uhl (1990), profit rates vary depending on the structure of the market and the product differentiation. It has also been established by FAO (1994) that profits may be relatively higher in markets where few firms control most of the supply.

Resident wholesalers' sold the lowest volume of fresh coconut (360,000 bags), with retailers and traveling wholesalers selling the highest volume of fresh coconut, 831,000 bags and 1325, 551 bags, respectively. This is due to their varied rates of turning over their working capital. A nut of fresh coconut at the farm gate was sold at GH0.10. Itinerant wholesalers sold a nut of fresh coconut to resident wholesaler at GH0.25 making a price margin of GH 0.15. Sedentary wholesalers and

retailers, on the other hand, sold a nut of fresh coconut at GH 0.30 and GH 0.50 with a price margin of GH 0.05 and GH 0.20, respectively. Retailers made the highest margin.

Economic viability of fresh coconut marketing

The economic viability of fresh coconut marketing was assessed using Returns on Capital Employed (RoCE), to indicate the profitability of the venture and the results presented in Table 8. The retail returns is the highest among the marketing agents whereas returns to the sedentary wholesale is the lowest.

The amount of capital employed by retailers in the fresh coconut marketing was very low with a mean value of GH 38.25. This increased drastically to the itinerant and wholesalers along the distribution channel. The mean values of capital employed for sedentary wholesalers

Table 5. Annual revenue, marketing margins and profits for each trader along the distribution channel.

Measures of marketing margin	Statistic (GH₵)				Percentage of marketing margin
	Mean	Minimum	Maximum	Std. dev.	
Retailer					
Cc	13473.00	6120.00	24840.00	6896.79	-
Rc	20601.00	9000.00	36000.00	10781.98	-
Tc	441.00	72.00	792.00	251.11	6.2
Wc	9.88	5.00	18.00	4.89	0.1
Ac	14.07	0.00	33.00	11.33	0.2
Oc	345.00	120.00	600.00	221.08	4.8
Pm= Rc -[Tc +Wc+Ac+Cc+oc]	6318.00	-	-	-	88.7
(a) Mm = Tc+Wc+Ac+Oc+Pm	7128.00	-	-	-	100
Sedentary wholesaler					
Cc	5190.45	1570.00	48896.00	7190.74	-
Rc	6324.75	2808.00	10080.00	1607.68	-
Tc	263.60	180.00	408.00	63.81	23.2
Wc	44.98	26.00	78.00	11.36	4.0
Ac	12.98	0.00	33.00	13.66	1.1
Oc	472.50	120	600.00	210.14	41.7
Pm= Rc -[Tc +Wc+Ac+Cc+Oc]	340.24	-	-	-	30.0
(b) Mm =Tc+Wc+Ac+Oc+Pm	1134.30	-	-	-	100
Itinerant wholesaler					
Cc	7161.00	1200.00	21000	4823.66	-
Rc	14614.20	31200.00	50400.00	10356.92	-
Tc	1522.28	576	1888	335.18	20.4
Wc	179.63	38	468	106.16	2.4
Ac	0.00	0.00	0.00	0.00	0.00
Oc	425.10	120.00	720	190.78	5.70
Pm= Rc-[Tc + Wc+Ac+Cc+Oc]	5326.19	-	-	-	71.5
(c) Mm= Tc+Wc+Ac+Oc+Pm	7453.2	-	-	-	100
Total Mm = (a+b+c) +Ms +Mi	15,715.50	-	-	-	-

Source: Survey data, 2010. Rc= revenue from coconut; Cc = cost of purchasing coconut; Tc = Transaction cost; Wc = cost of working capital; Ac = depreciation of fixed asset; Oc = opportunity cost of traders; Pm = profit margin; Mm = marketing margin.

Table 6. Annual volume of fresh coconut sold along the distribution channel.

Type of trader	Mean volume of coconut sold ("50 coconut bag")
Retailer	831,000
Sedentary wholesaler	360,000
itinerant wholesaler	1325,551

Source: Computed from survey data, 2010.

itinerant wholesalers were GH 172.25 and GH 655.00, respectively. The enterprise is characterized by a low

capital outlay. The RoCE for retailers, sedentary wholesalers and itinerant wholesalers were 16518, 198

Table 7. Price per fresh coconut along the distribution channel.

Type of trader	Price of fresh coconut (GH¢)			
	Mean	Price margin	Minimum	Maximum
Retailer	0.50	0.20	0.32	0.50
Sedentary wholesaler	0.30	0.05	0.20	0.32
Itinerant wholesaler	0.25	0.15	0.14	0.30
Producer	0.10	-	0.10	0.00

Source: Computed from survey data, 2010.

Table 8. Returns on capital employed.

Parameter	Statistics (GH¢)			
	Mean	Minimum	Maximum	Standard deviation
Retailers				
Ci	38.25	18.00	70.00	19.36
Pm	6318.05	-	-	-
RoCE = Pm/Ci x100	16518%	-	-	-
Sedentary wholesalers				
Ci	172.25	100.00	300.00	43.47
Pm	340.24	-	-	-
RoCE = Pm/Ci x100	198%	-	-	-
Itinerant wholesalers				
Ci	655.00	150.00	1800.00	389.02
Pm	5326.19	-	-	-
RoCE = Pm/Ci x100	813%	-	-	-

Ci = capital invested; Pm = profit margin; RoCE = return on capital employed. Source: Computed from survey data, 2010.

and 813%, respectively. Retailers recorded the highest return on capital followed by itinerant wholesalers. Sedentary wholesalers had the least return on capital. The values were very high, due to low capital invested and the fact that capital was turned over several times during the year. Itinerant wholesalers turned over their capital 24 times within a year. Retailers who realized the highest profitability were found to have turned over the working capital 52 times in a year.

This observation shows that, there was no equitable distribution of income along the distribution channel as required by economic goal. Fresh coconuts are priced exorbitantly at wholesale and retail levels, thereby making abnormal profit with a profitability being several times more than the going interest rate in the economy.

CONCLUSION AND RECOMMENDATION

Fresh coconut marketing in the Kumasi metropolis is a viable venture that employs people in the active economic

age group. Actors in the market have very low educational background with some having no formal education. It has been identified as a safe net for school drop outs, proving meaningful employment for them. Fresh coconut marketing has been found as a lucrative venture, to economically empower both men and women to improve their livelihoods. With a minimum of GH 18.00, as a start-up capital, one can enter into this venture and receive proportionate returns.

Actors in the market receive rates of returns several times higher than going interest rate in the economy because they can turn over their proportionately low capital several times in the year to accrue more profit. Retailing, though needs a very small start-up capital, is the most profitable level along the distribution channel. Transporting fresh coconut from the production centre to the consumer market is more profitable, than rationing them to retailers in the marketplace. Encouraging more traders into the marketing system by making people aware of its viability and making available capital in the

form of loans to stiffen competition will lower consumer price for fresh coconut, redistribute profits equally along the distribution channel and make the market perform efficiently.

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