

IMPROVEMENT OF OMAN CONSUMER PRICE INDEX

10-13 NOVEMBER 2012



MUSCAT, OMAN

**Operation quality of CPI and chaining procedures**

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# Quality Controls

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Quality controls are carried out with two steps in Turkish CPI.

- Before the dissemination of CPI data
- After the dissemination of CPI data

# Quality Control Before the Dissemination

http://dieweb.die.gov.tr - Fiyat girişi - Microsoft Internet Explorer

**Fiyat Giriş Ekranı**

Yerleşim yeri: ANKARA-KEÇİÖREN  
İşyeri kodu, ünvanı ve türü: 12-KILER SÜPERMARKET-Supermarket  
Dağıtım (defter) numarası: A-5  
İkame durumu: 108  
Toplam madde sayısı: 0  
Girilen madde sayısı: 0  
Bugünün tarihi: 2006-02-02

Dönem : 1

Madde tanımı :

Madde adı	Tanımda değişiklik nedeni	Marka	Model	Ölçü Birimi	Önceki miktar	Miktar	ga	İndirim yüzdesi	Reyon fiyatı	Fiyat	Önceki fiyat	Değişim oranı (%)	Açıklama
Pirinç (Baldo)	Marka bulunamadı	Marka seç Yayla Trakya		KG	0		< Seçiniz >				2,20	-100,00	
Pirinç (Berzani)	Marka bulunamadı	Marka seç Kilerim		KG	0		< Seçiniz >				2,25	-100,00	
Buğday Unu (Paket)	Tümü	Marka seç Kilerim		KG	0		< Seçiniz >				0,81	-100,00	
Pirinç Unu (Sade)	Marka bulunamadı	Marka seç Bizim		KG	500		< Seçiniz >				2,20	-100,00	
Bulgur (Sade)	Marka bulunamadı	Marka seç Canerler		KG	0		< Seçiniz >				0,75	-100,00	
Normal Ekmek	< Seçiniz >	Marka seç		KG	200		< Seçiniz >				1,00	-100,00	
Bisküvi (Sade)	< Seçiniz >	Marka seç Eti		KG	0		< Seçiniz >				3,90	-100,00	
Bisküvi (Bebek)	Marka bulunamadı	Marka seç Eti cici bebe		KG	0		< Seçiniz >				4,49	-100,00	
Bisküvi (Kremalı-Kaymaklı)	Marka bulunamadı	Marka seç Eti		KG	100		< Seçiniz >				4,40	-100,00	
Çubuk Kraker (Sade)	Tümü	Marka seç Eti crax		KG	40		< Seçiniz >				4,50	-100,00	

[ İptal ] [ Kaydet ]

Done Internet

start Inbox - Outlook Express WEBPRO2@LINESTAT... fiyatdokuman - Micro... DIE WEB UYGULAMAL... http://dieweb.die.go... TR 10:25

# Quality Control Before the Dissemination

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Price is automatically calculated by considering quantity, discount as a percentage and rayon price.

By comparing the preceding price and current price, if change rate exceeds %20 limit, system gives warning. This is the first alert for the price collector.

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# Quality Control Before the Dissemination

Windows Internet Explorer browser window showing the "Fiyat Giriş Ekranı" (Price Entry Screen) for the "Tükapp" system. The browser address bar shows "http://tukapp.tuk.gov.tr:KPTUfe/FiyatPreInsert\_d0?index=0".

The main content area displays the "Fiyat Giriş Ekranı" with the following information:

Yerleşim yeri: ANKARA-MERKEZ  
İşyeri kodu, ünvanı ve türü: 1-gaye-Giyim+Ayakkabi  
Dağıtım (defter) numarası: 1  
Toplam madde sayısı: 4  
Girilen madde sayısı: 0  
Bugünün tarihi: 2011-09-09

Below this, there is a form for entering price data. The "Madde tanımları" section shows a list of items with their respective prices and change rates. A warning message is displayed over the table:

Message from webpage  
Pazen (Çamaşırılık) fiyatında yüksek değişim oranı var. Girilen fiyatı kontrol ediniz

Madde adı	Fiyat durumu değişim sebebi	Ekeme	Marka	Ayrıntılı Tanım	Barkod	Ölçü Birimi	Önceki miktar	Miktar	GD	İndirim (%)	Reyon fiyatı	Fiyat	Önceki fiyat	Değişim oranı (%)	Açıklama
Pazen (Çamaşırılık)	= Seçiniz =	<input type="checkbox"/>	Marka								15	15	10.00	50	
Erkek Eşofman Altı (Penye)	= Seçiniz =	<input type="checkbox"/>	Marka										15.00	-100.00	
Kadın Pantolon+Çeket Takım (Kıyık)	= Seçiniz =	<input type="checkbox"/>	Marka			TAKIM	0						65.00	-100.00	
Kadın Etek (Yazlık)	= Seçiniz =	<input type="checkbox"/>	Marka			ADET	0						35.00	-100.00	

At the bottom of the form, there are buttons for "İptal" and "Kaydet".

## Quality Control After Dissemination

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- CATI is an interactive front-end computer system that aids interviewers to ask questions over the telephone. The answers are then keyed into the computer system immediately by the interviewer.
  - The computer program controls branching to or skipping among questions and validates the data as it is entered. CATI application has been used in TURKSTAT since 2006.
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## Quality Control After Dissemination

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- The smart electronic form also performed on-line checks on the responses keyed in and alerted the interviewer of inconsistent or doubtful answers. The outlet or renter is not called twice in a year.
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# Calculation of An Annual Chain CPI

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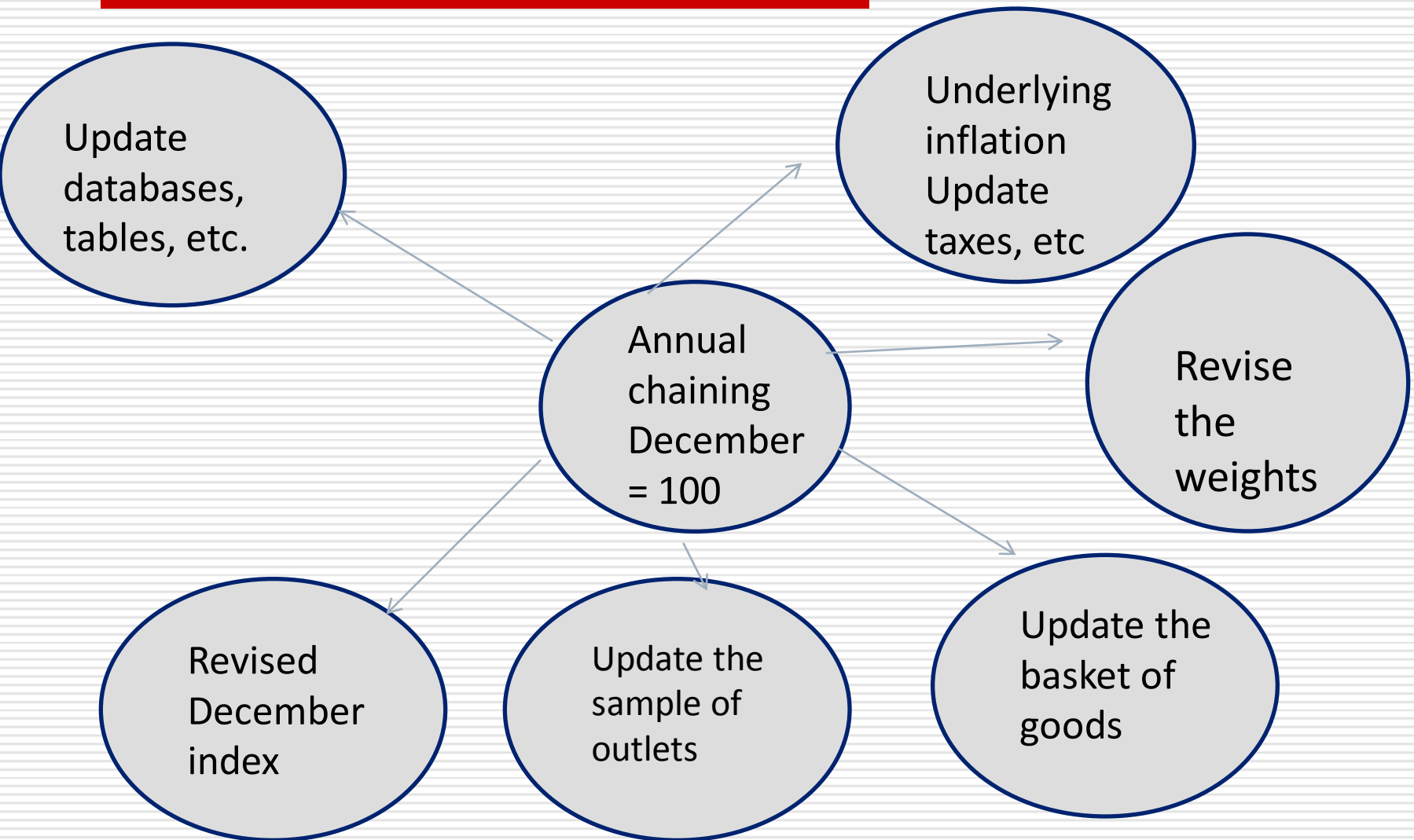
Factors affecting changes in demand

- Purchaser's tastes or preferences
  - Changes in technology which improve productivity
  - Changes in real incomes
  - Changes in population and its distribution
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# Calculation of An Annual Chain CPI

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# Calculation of An Annual Chain CPI

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- Identify new items that have a significant share of consumption, i.e. 0.1 % of the expenditures covered
    - Important to look for new types of items and services, i.e. I-pad, download music, etc
    - Introduce as early as possible – capture the price decrease
  
  - Collect prices for all new items in the price reference month (i.e. December)
    - Collected prices for new items will not be used in the calculating of December CPI. Will enter the CPI in January and work as references prices (base prices)
  
  - Remove items that are **obsolete**
    - Do not remove from the basket before December index is calculated
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## Calculation of An Annual Chain CPI

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- Use a reliable source, i.e. Household budget survey or National accounts
  - Only consumption expenditures are relevant
  - If possible use additional information
    - Production and trade statistics, retail sales data, etc.
  - Updating the weights is a time consuming task
    - Start as soon as the consumption data are available
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## Calculation of An Annual Chain CPI

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- December price observations must be edited to ensure reference prices of good quality
  - All items in the basket must have a price and an index for December when calculating the January CPI
    - Impute December prices for those items that does not have a December price
  - Indices for December on every level (item, sub-groups, classes, groups and divisions) work as chaining
    - The December indices for the new items will be equal to 100
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# Calculation of An Annual Chain CPI

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- If you are calculating indicators of underlying inflation:
    - Update taxes
    - Update chain factors on all levels, etc.
  - Update databases
  - Update tables
  - Inform the users about the revised weights and basket of goods and services
    - If possible calculate the CPI with new and old weights to estimate the impact of revised weights
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# Calculation of An Annual Chain CPI

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Frequent weight updates and chained price indices

- Advice is to update at least every 5 years, and more often if there is evidence of rapid changes in consumption/production patterns.
  - The shorter the period between weight updates, the less likely that changes in preferences, improved technology, and changes in income will have a large impact on our price measures.
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## Calculation of An Annual Chain CPI

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- So far the discussion has been of direct comparisons – between places  $s$  and  $t$ . There will be seen to be a case for comparing say  $s$  and  $t$  by comparing say,  $s$  with  $a$ , then  $a$  with  $b$ , then  $b$  with  $t$ . The indices or *links* between each successive pair of places can then be linked together by successive multiplication to form a *chain index*. Any index number formula can be used for the links.
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# Calculation of An Annual Chain CPI

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The CPI is calculated as a chain linked index with annual update of the weights. Thus, from January 2005 to December 2005 all higher level indices were calculated as

$$I_{03:t} = \sum W_{03}^i \cdot I_{03:t}^i ,$$

From January 2006 to December 2006 all higher level indices will be calculated as

$$I_{03:t} = I_{03:Dec05} \cdot \sum W_{03/04(Dec05)}^i \cdot I_{Dec05:t}^i$$

Where indicates the weights based on 2/3 of the HBS of 2003 and the HBS of 2004, price updated to December 2005.

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## Calculation of An Annual Chain CPI

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From January 2007 to December 2007 all higher level indices will be calculated as

$$I_{03:t} = I_{03:Dec06} \cdot \sum W_{04(Dec06)}^i \cdot I_{Dec06:t}^i$$

From January 2008 to December 2008 all higher level indices will be calculated as

$$I_{03:t} = I_{03:Dec07} \cdot \sum W_{05(Dec07)}^i \cdot I_{Dec07:t}^i$$

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## Calculation of An Annual Chain CPI

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- Laspeyres formula is used to aggregate basic item indices to obtain group and all item indices
- Aggregated short term indices at the group level are chained to the previous indices

$$I_{0:t} = \sum w_b I_{0:t-1}^i * I_{t-1:t}^i$$

## Calculation of An Annual Chain CPI

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Weights are price updated to ensure period covered by expenditure weights and the base price period correspond.

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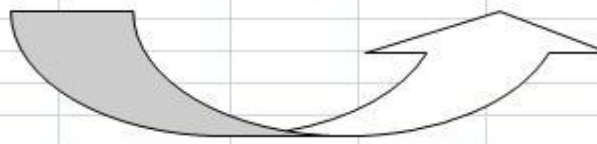
# Calculation of An Annual Chain CPI

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PRICE UPDATE	2010 HBS weights	2010 Index Average	2011 December Index	Index Change	Price Update	Price Update (100) FINAL
Item a	60	150	200	1.3333	80	61.8
Item b	40	170	210	1.2353	49.41176	38.2
	<b>100</b>				<b>129.4</b>	<b>100</b>

# Calculation of An Annual Chain CPI

	Index December 2010	Weight 2011	January 2011	February 2011	Monthly Change(%)	Chain January 2011	Chain February 2011	Monthly Change(%)
GENERAL	160		101,72	104,59	2,83	162,75	167,35	2,83
FOOD	135	75	99,71	102,33	2,63	134,61	138,14	2,63
Item a	120	61,8	102	105	2,94	122,40	126,00	2,94
Item b	150	38,2	96	98	2,08	144,00	147,00	2,08
CLOTHING	200	25	107,75	111,40	3,39	215,50	222,80	3,39
Item c	220	55	110	115	4,55	242,00	253,00	4,55
Itemd	180	45	105	107	1,90	189,00	192,60	1,90


  
 SAME  
 MONTHLY  
 CHANGE (%)

**Thank you...**

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