

Segunda Reunión Técnica del Programa de Comparación Internacional (PCI)

ICP 2017: Machinery & Equipment (M&E)

PCI 2017: Maquinaria & Equipo (M&E)



- **Objective of the M&E survey**
- **Overview of the M&E survey form**
- **Review of the M&E survey form**
 - Item examples
 - Survey Form and Data entry
 - Decision on the form structure for LAC
- **Frequently Asked Questions**

Objective of the M&E survey

- ▶ The objective is to gather the price information needed to construct PPPs to deflate the Machinery & Equipment component of *Gross Fixed Capital Formation* (a GDP component)
- ▶ Special survey (and form) needed because prices are not as easily observed as those for household consumption

Overview of the M&E survey

▶ Pricing approach

Similar to that of household consumption goods: countries collect national average prices for items from a common list of predefined items

▶ Changes with respect to ICP 2011 M&E survey

1. Number of items and basic headings about the same as ICP ICP
2. Some, but not all, items and item definitions were updated (each item has notes on the update, if any)
3. Item codes were changed due to updated ICP classification
4. *Specified* items will now have an *unspecified* counterpart, where applicable
5. Countries asked to list the characteristics of each item priced in order to assess its compatibility with the item listed, e.g. for ‘tractor’; specify *price*, but also specify *model*, *power of engine*, etc.

Overview of the M&E survey

HEADING	LEVEL	NUMBER OF ITEMS		
		Specified	Unspecified	Total
GROSS FIXED CAPITAL FORMATION	Category	107	89	196
MACHINERY AND EQUIPMENT	Group	92	84	176
<u>Metal products and equipment</u>	<u>Class</u>	81	73	154
Fabricated metal products	BH	7	3	10
Electrical and optical equipment	BH	35	31	66
General purpose machinery	BH	13	13	26
Special purpose machinery	BH	26	26	52
<u>Transport equipment</u>	<u>Class</u>	11	11	22
Road transport equipment	BH	11	11	22
Other transport equipment	BH	-	-	-
...
OTHER PRODUCTS	Group	15	5	20
<u>Other products</u>	<u>Class</u>	15	5	20
Other products	BH	15	5	20

Overview of the M&E survey

HEADING	LEVEL	NUMBER OF ITEMS		
		Specified	Unspecified	Total
GROSS FIXED CAPITAL FORMATION	Category	107	89	196
MACHINERY AND EQUIPMENT	Group	92	84	176
<u>Metal products and equipment</u>	<u>Class</u>	81	73	154
Fabricated metal products	BH	7	3	10
Electrical and optical equipment	BH	35	31	66
General purpose machinery	BH	13	13	26
Special purpose machinery	BH	26	26	52
<u>Transport equipment</u>	<u>Class</u>	11	11	22
Road transport equipment	BH	11	11	22
Other transport equipment	BH	-	-	-
...
OTHER PRODUCTS	Group	15	5	20
<u>Other products</u>	<u>Class</u>	15	5	20
Other products	BH	15	5	20

3 classes

Overview of the M&E survey

HEADING	LEVEL	NUMBER OF ITEMS		
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Special purpose machinery	BH	26	26	52
<u>Transport equipment</u>	<u>Class</u>	11	11	22
Road transport equipment	BH	11	11	22
Other transport equipment	BH	-	-	-
...
OTHER PRODUCTS	Group	15	5	20
<u>Other products</u>	<u>Class</u>	15	5	20
Other products	BH	15	5	20

7 basic headings

Overview of the M&E survey

Most, but not all, *specified* items have an *unspecified* counterpart

HEADLINE	LEVEL	NUMBER OF ITEMS		
		Specified	Unspecified	Total
GROSS VALUE ADDED	Category	107	89	196
MACHINERY AND EQUIPMENT	Group	92	84	176
<u>Metal products and equipment</u>	<u>Class</u>	81	73	154
Fabricated metal products	BH	7	3	10
Electrical and optical equipment	BH	35	31	66
General purpose machinery	BH	13	13	26
Special purpose machinery	BH	26	26	52
<u>Transport equipment</u>	<u>Class</u>	11	11	22
Road transport equipment	BH	11	11	22
Other transport equipment	BH	-	-	-
...
OTHER PRODUCTS	Group	15	5	20
<u>Other products</u>	<u>Class</u>	15	5	20
Other products	BH	15	5	20

Example: Specified vs. Unspecified

Portable rotary screw compressor [Compresor rotativo portátil (de tornillo)]

Código del artículo	1501115020	
Nombre del artículo	Portable rotary screw compressor	
	Propuesto	
Fabricante (y país de origen)	Atlas Copco (Sweden)	
Modelo	XAS 68 Kd 8 Series	
	Metric	Imperial
Free air delivery	3.5 m ³ /min.	135 CFM
Working pressure	7 bar	100 psi
Sound power level (EC Stage II)	98 dB	98 dB
Engine: number of cylinders	4	4
Full load speed	3000 rpm	3000 rpm
Output at rated speed	26.5 kw	35.5 hp
With brakes and adjustable towbar	yes	yes
Without particle filter	yes	yes
Overall width	135 cm.	53 in
Overall length	229 cm.	90 ins
Height	140 cm.	55 in
Weight	650 kg (box unit)	1433 lb (box unit)
Company website	www.atlascopco.com	www.atlascopco.com
Type of price information	(1-4)	(1-4)
Price from the Internet	yes/no	yes/no

An unspecified item will have the same specifications as an existing item (whether or not on the M&E list) except for the brand

Unspecified does **not** imply brand less, e.g. unspecified hacksaw (sierra-no especificada) will still have a brand, which needs to be reported

Example: Specified vs. Unspecified

Portable rotary screw compressor [Compresor rotativo portátil (de tornillo)]

Specified Item

Código del artículo	1501115020	
Nombre del artículo	Portable rotary screw compressor	
	Propuesto	
Fabricante (y país de origen)	Atlas Copco (Sweden)	
Modelo	XAS 68 Kd 8 Series	
	Metric	Imperial
Free air delivery	3.5 m ³ /min.	135 CFM
Working pressure	7 bar	100 psi
Sound power level (EC Stage II)	98 dB	98 dB
Engine: number of cylinders	4	4
Full load speed	3000 rpm	3000 rpm
Output at rated speed	26.5 kw	35.5 hp
With brakes and adjustable towbar	yes	yes
Without particle filter	yes	yes
Overall width	135 cm.	53 in
Overall length	229 cm.	90 ins
Height	140 cm.	55 in
Weight	650 kg (box unit)	1433 lb (box unit)
Company website	www.atlascopco.com	www.atlascopco.com
Type of price information	(1-4)	(1-4)
Price from the Internet	yes/no	yes/no

Unspecified Item

Código del artículo	1501115010	
Nombre del artículo	Portable rotary screw compressor	
	Propuesto	
Fabricante (y país de origen)	Unspecified	
Modelo	Unspecified	
	Metric	Imperial
Free air delivery	3.5 m ³ /min.	135 CFM
Working pressure	7 bar	100 psi
Sound power level (EC Stage II)	98 dB	98 dB
Engine: number of cylinders	4	4
Full load speed	3000 rpm	3000 rpm
Output at rated speed	26.5 kw	35.5 hp
With brakes and adjustable towbar	yes	yes
Without particle filter	yes	yes
Overall width	135 cm.	53 in
Overall length	229 cm.	90 ins
Height	140 cm.	55 in
Weight	650 kg (box unit)	1433 lb (box unit)
Company website		
Type of price information	(1-4)	(1-4)
Price from the Internet	yes/no	yes/no

Example: Electrical and optical equipment



Portable generator - Unspecified [Generador portátil - No Especificado]

Código del artículo		1501112350		ENTRADA DE DATOS
Nombre del artículo		Portable generator		
Fabricante (y país de origen)	Propuesto			Observado
	Unspecified			
Modelo	Unspecified			
	Metric	Imperial		Observado
Fuel type	Petrol	Petrol		
Four stroke engine	yes	yes		
Max power output	3.6 kW	4.8 bhp		
Output voltage (50 Hz)	115/230 V	115/230 V		
Output: rated	3.4 kW	4.6 bhp		
Current	31/15.5 A	31/15.5 A		
Cont. op. hours w/o refuelling	2.9	2.9		
With generator frame housing	yes	yes		
Fuel tank Capacity	6.0 l	1.3 galls		
Dimensions	800 x 550 x 540 mm	31.5 x 21.7 x 21.3 ins		
Dry weight	58 kg	128 lbs.		
Company website				
Type of price information	(1-4)	(1-4)		
Price from the Internet	yes/no	yes/no		

Example: Electrical and optical equipment



Portable generator - Unspecified
 [Generador portátil - No Especificada]

Código del artículo		1501112350		ENTRADA DE DATOS	
Nombre del artículo		Portable generator			
Fabricante (y país de origen)		Propuesto		Observado	
Modelo		Unspecified			
		Unspecified			
		Metric	Imperial	Observado	
Fuel type		Petrol	Petrol		
Four stroke engine		yes	yes		
Max power output					
Output voltage (50 Hz)					
Output: rated					
Current					
Cont. op. hours w/o refuelling					
With generator frame housing					
Fuel tank Capacity					
Dimensions					
Dry weight					
Company website					
Type of price information		(1-4)	(1-4)		
Price from the Internet		yes/no	yes/no		

Note: identifying unspecified items can be tricky. Some tips:

1. Look at the specified counterpart
2. Look at item brochure (for specified item)
3. Search for specified item online

Example: Road transport equipment

Tractor unit - Mercedes Benz (Germany) - Actros 1843
 [Tractocamión de carga para tareas pesadas - Mercedes Benz (Alemania) - Actros 1843]



Código del artículo		1501121200		ENTRADA DE DATOS
Nombre del artículo		Tractor unit		
Fabricante (y país de origen)	Propuesto		Observado	
	Mercedes Benz (Germany)			
Modelo	Actros 1843 LS 4x2 F11			
	Metric	Imperial	Observado	
Engine Euro 6 compliant	yes	yes		
G. V. W.	18000 kg	39683 lbs		
Engine no.	OM 470	OM 470		
Engine Capacity	10.7 l	653 in ³		
Power of engine	315 kw	422 bhp		
Gearbox: number of forward speeds	12-speed, automatic transmission	12-speed, automatic transmission		
Braking system	ABS and ASR	ABS and ASR		
Type of suspension: front	spring	spring		
Type of suspension: rear	full air	full air		
Wheelbase	3550 mm	139.8 ins		
With standard sleeper cab: length	2300 mm (L-cab StreamSpace)	90.6 ins (L-cab StreamSpace)		
With standard roof	yes	yes		
Company website	http://trucks.mercedes-benz.com	http://trucks.mercedes-benz.com		
Type of price information	(1-4)	(1-4)		
Price from the Internet	yes/no	yes/no		

Survey Form and Data Entry

- ▶ **M&E Survey Form includes the following sheets:**
 - **Index** (to view and access all survey form sheets)
 - **Instructions** (general instructions, explanatory notes for recording of data, explanation of pricing guidelines)
 - **Country Data sheet** (for country to enter name, currency, ISO code, and year prices correspond to)
 - **Individual item sheets** (one sheet per item)
 - **Database sheet** (records all data entered in item sheets)
 - **Item Re-classification sheet** (concordance table between 2017 and 2011 ICP)

Survey Form and Data Entry

What is the link between data entered in the individual item sheets and the database sheet?

INDEX (You can click the below link to go to the sheet)	
0.	Cover Page
1.	Index
2.	Instructions
3.	Country Data
150111102	Double skinned underground horizontal cylindrical storage tank - Unspecified
150111103	Double skinned underground horizontal cylindrical storage tank - Unspecified
150111104	Stainless steel beer keg - Unspecified
150111105	Packaged steam boiler - Unspecified
150111106	Hacksaw - Unspecified
150111107	Hacksaw - Bahco (Sweden): 325
150111108	Hacksaw - Stanley (USA): Turbocut (1-20-110)
150111109	Automotive tool set - Facom (France): Tool set 2143.M in box BT.11A
150112101	Portable rotary screw compressor - Unspecified
150112102	Portable rotary screw compressor - Atlas Copco (Sweden): XAS 67 Dd Series 7
150112103	Portable rotary screw compressor - Atlas Copco (Sweden): XAS 77 Dd Series 7
150311107	Computer software - Microsoft (USA): Microsoft Visual Studio Pro 2013
150311108	Computer software - Adobe (USA): Creative Cloud for teams 2014
150311109	Computer software - Adobe (USA): Adobe Acrobat XI Pro (Retail)
150311112	Anti-virus software - McAfee (USA): Total Protection 2015 3 User 1yr
150311113	Anti virus software - Symantec (USA): Norton Security 2015 5 devices 1yr
150311114	Computer software - Microsoft (USA): SQL Server 2014 Enterprise Core Edition
4.	Database

Data for each item is entered in each corresponding individual item sheet...

..all entered data entered in the individual sheets is “recorded” to the database sheet for easy extraction (so, do not enter anything here)

Survey Form and Data Entry: Item Sheet

Item Code	1501115120		DATA ENTRY
Item Name	Water pump 18 x 24		
Make (and nationality) Model	Proposed		Observed
	Grundfos (Denmark) TP 32-320/2		
	Metric	Imperial	Observed
Type: single stage centrifugal in-line single head	yes	yes	
Rated head	24.04 m	78.9 ft	
Rated capacity	17.6 m ³ /h	10.4 cfm	
Speed	2900 rpm	2900 rpm	
Max. working pressure	16 bar	232 psi	
Shaft: stainless steel	yes	yes	
Pump and impeller: cast iron	yes	yes	
Impeller diameter	155 mm	6.1 in	
Rated voltage/frequency	3x380-415V/50hz	3x380-415V/50hz	
Power of motor	2.2 kw	2.9 bhp	
No. of poles	2	2	
Total weight, including baseplate	52 kg	115 lb	
Company website	www.grundfos.com	www.grundfos.com	
Type of price information	(1-4)	(1-4)	
Price from the Internet	yes/no	yes/no	
	Prices		Observed
	Unit base price		
	Order quantity		
	Delivery cost/unit		
	Installation cost per unit		
	Other unit costs (please specify here)		
	Discount per unit (%)		
	Non-deductible taxes		
	Total unit price net of deductible taxes and discount		0
	Importance		
	Is the item priced important (1) or less important (0)?		
	Notes		Specifications revised. The product code for this model is 96086769.
	Comments		
	Date of collection (mm/dd/yyyy)		

Enter observed brand and model

Enter observed technical details and extra information (price type, internet price or not)

Enter observed price and other details (note: no need to calculate total unit price, a formula does this)

Enter comments and the date the reported price refers to

Survey Form and Data Entry: Price Concept

Prices	Observed
Unit base price	
Order quantity	
Delivery cost/unit	
Installation cost per unit	
Other unit costs (please specify here)	
Discount per unit (%)	
Non-deductible taxes	
Total unit price net of deductible taxes and discount	0
Importance	
Is the item priced important (1) or less important (0)?	
Notes	
Comments	
Date of collection (mm/dd/yyyy)	

- ▶ Prices reported must be for one unit, regardless of the order quantity (ideally should be 1).
- ▶ Purchaser prices are required (for the machinery installed and ready for use), so countries must:
 - Report (unit) costs of transporting the asset to the place where it will be used
 - Report any (unit) charges for installing the asset so that it is ready for use in production
 - Report any (unit) discounts
 - Report non-deductible product taxes paid by the purchaser (but only if these are nondeductible!)
- ▶ **Total unit price** (net of deductible taxes and discounts) will be generated automatically by an Excel formula in the sheet if and only if the relevant price cells are filled
- ▶ Note: second-hand goods are not to be priced

Survey Form and Data Entry: Price Concept

Prices	Observed
Unit base price	
Order quantity	
Delivery cost/unit	
Installation cost per unit	
Other unit costs (please specify here)	
Discount per unit (%)	
Non-deductible taxes	
Total unit price net of deductible taxes and discount	0
Importance	
Is the item priced important (1) or less important (0)?	
Notes	
Comments	
Date of collection (mm/dd/yyyy)	

Recall: the instructions sheet explains these details and more!

- ▶ Prices reported must be for one unit, regardless of the order quantity (ideally should be 1).
- ▶ Purchaser prices are required (for the machinery installed and ready for use), so countries must:
 - Report (unit) costs of transporting the asset to the place where it will be used
 - Report any (unit) charges for installing the asset so that it is ready for use in production
 - Report any (unit) discounts
 - Report non-deductible product taxes paid by the purchaser (but only if these are nondeductible!)
- ▶ **Total unit price** (net of deductible taxes and discounts) will be generated automatically by an Excel formula in the sheet if and only if the relevant price cells are filled
- ▶ Note: second-hand goods are not to be priced

Survey Form and Data Entry: Other Details

Prices	Observed
Unit base price	
Order quantity	
Delivery cost/unit	
Installation cost per unit	
Other unit costs (please specify here)	
Discount per unit (%)	
Non-deductible taxes	
Total unit price net of deductible taxes and discount	0
Importance	
Is the item priced important (1) or less important (0)?	
Notes	
Comments	
Date of collection (mm/dd/yyyy)	

- ▶ Report if the item priced is important (within the basic heading)
- ▶ Add any comments (e.g. any of the requested price info was already included in unit base price)
- ▶ Report the date the price reported refers to
 - ▶ ideally price for 2017 (but always report the date)
 - ▶ **maybe prices for 2018 are more feasible?**

Decision on LAC 2017 ICP M&E Form Structure

Item Code	1501115120			Data Entry 1	Data Entry 2	Data Entry 3
Item Name	Water pump 18 x 24			Observed	Observed	Observed
Make (and nationality)	Proposed			Observed	Observed	Observed
	Grundfos (Denmark)					
Model	TP 32-320/2					
Type: single stage centrifugal in-line single head	Metric	Imperial		Observed	Observed	Observed
	yes	yes				
Rated head	24.04 m	78.9 ft				
Rated capacity	17.6 m³/h	10.4 cfm				
Speed	2900 rpm	2900 rpm				
Max. working pressure	16 bar	232 psi				
Shaft: stainless steel	yes	yes				
Pump and impeller: cast iron	yes	yes				
Impeller diameter	155 mm	6.1 in				
Rated voltage/frequency	3x380-415V/50hz	3x380-415V/50hz				
Power of motor	2.2 kw	2.9 bhp				
No. of poles	2	2				
Total weight, including baseplate	52 kg	115 lb				
Company website	www.grundfos.com	www.grundfos.com				
Type of price information	(1-4)	(1-4)				
Price from the Internet	yes/no	yes/no				
Prices			Average	Observed	Observed	Observed
Unit base price						
Order quantity						
Delivery cost/unit						
Installation cost per unit						
Other unit costs (please specify here)						
Discount per unit (%)						
Non-deductible taxes						
Total unit price net of deductible taxes and discount						
Importance						
Is the item priced important (1) or less important (0)?						
Notes						
Comments						
Date of collection (mm/dd/yyyy)						

<- Proposal to help countries

Allow countries to report more than one observation in each individual item sheet and have the sheet calculate the national average of the reported price observations

- parameters observed would have to be reported for each observation
- crucial to report collection date for each observation

Frequently Asked Questions (1)

- ▶ **How many items to price?**

As many as you can, while ensuring you cover all basic headings.

- ▶ **How many price observations per item?**

Depends on the national price variation of the item. However, less observations are usually needed for M&E than, say, rice and most consumer goods. It may even be one observation in some cases.

- ▶ **Do I have to collect prices in all cities in my country?**

Again, depends on the national price variation of the item. This will be more of a concern for larger countries. It may be a good idea to think of what cities/areas accounts for most of the national expenditure on M&E. Price collection can target those areas.

Frequently Asked Questions (2)

▶ What price parameters are important?

In principle, all, that's why they were listed (plus they are not many). However, often, but not always, the first parameters (from top to bottom) are the more important ones.

▶ Why report the price parameters observed?

For validation purposes. During the 2011 ICP, questions arose during validation as to whether countries did or did not include costs of transportation, installation, etc. (included in the purchasing price)

Frequently Asked Questions (3)

▶ Why have both specified and unspecified items?

So that country prices are more representative. We want to avoid situations where countries have M&E, but are not pricing items because they are unable to find a specific brand or model.

▶ Why report the price parameters observed?

For validation purposes. During the 2011 ICP, questions arose during validation as to whether countries did or did not include costs of transportation, installation, etc. (included in the purchasing price)

Frequently Asked Questions (4)

- ▶ **I work on CPI, where and how do I get these prices?**

Prices of equipment goods may be obtained directly from producers, importers, distributors, or sometimes catalogues. Asking colleagues working on PPI can be beneficial. In the past, ICPs prices were collected by the method countries found the most convenient such as personal visit, telephone, letter, or online.

- ▶ **What distance do I use to report the average delivery unit cost?**

If not provided when you obtain the prices, these should be estimated by countries selecting their own average distance over which the items are transported and delivered. Again, think of what locations account for most of the national expenditure on

M&E

After the meeting you will receive:

- ▶ LAC 2017 ICP M&E Survey Form (includes item pictures and instructions)
- ▶ Access to item brochures to view specified items (to help identify and understand the items)
- ▶ This presentation in English & Spanish (so you can share it)

Thank you! / ¡Gracias!

Annex: Brochure Example

- ▶ A set of brochures with pictures and item descriptions for *specified* items

- 1501111020.pdf
- 1501111030.pdf
- 1501111040.pdf
- 1501111050.pdf
- 1501111050_byworth-MX-Series.pdf
- 1501111070.pdf
- 1501111090.pdf
- 1501111110.pdf
- 1501112020.pdf
- 1501112040.pdf
- 1501112060.pdf
- 1501112070.pdf
- 1501112080.pdf
- 1501112100.pdf
- 1501112110.pdf
- 1501112120.pdf

Underground Tanks

Double skin underground fuel storage

CZ have been manufacturing underground tanks since 1961 and double skinned tanks since 1989. Their Deuma automated equipment ensures tanks are superb in terms of concentricity and straightness and the submerged arc welding in and out ensures quality of welding techniques and elimination of weld stresses. They can supply not only the tanks but many ancillary items such as holding down straps, access chambers, ground covers, suction pipes, fill pipes and overflow prevention valves. Via their sister company CZ can supply UPP piping and fittings making a one-stop shop a reality.

All tanks are fully tested and certified to BS EN 12285 specification and, on completion of manufacture, are externally blast cleaned to SA 2.5 followed by a coating of solvent-free polyurethane. This coating receives a 100% pin-hole test on completion.

Specification Summary	
Capacity Range	5,000 to 100,000 Litres
Tank Diameters	1250mm, 1500mm, 1900mm, 2000mm, 2500mm, 2743mm, 3000mm
Tank Length	If it can be transported CZ can build it
Specification	BS EN 12285 part 1
External Coatings	Polyurethane, Epoxy, Bitumen
Internal Linings	Epoxy
Testing	Pneumatic or Hydraulic

Conventional



PetroFast



If you believe that the modular PetroFast system may suit your installation specification please contact Cookson and Zinn on the number given below and full information will be provided

PetroTechnik
protecting your liquid assets



Underground Tanks

Double skin underground fuel storage

- The UK's number one tank manufacturer with over 45 years experience
- 5,000 to 100,000 Litre capacity
- Deuma automated assembly for maximum concentricity and straightness
- Single or multi-compartment
- Both skins tested and certified on completion
- Externally blast cleaned and coated
- 100% pin-hole test on finished coating
- Ancillary items supplied