**Relatório de construção do índice de preços de commodities**

**1. Fontes e agrupamento de dados**

O presente relatório trata do passo a passo da construção do indicador de preço de *commodities*. O índice proposto é essencialmente construído a partir de duas informações principais: a cotação internacional de matérias primas (invariável entre os países) e a exportação líquida de tais produtos (variável entre os países). A principal fonte de dados de preços internacionais é o Fundo Monetário Internacional, enquanto as fontes complementares são a Conferência das Nações Unidas sobre Comércio e Desenvolvimento e o *Federal Reserve Economic Data*. Informações sobre exportações líquidas foram extraídas do *UN Comtrade*.

O desafio primariamente consiste em unir ambas as bases. É necessário agrupar dados de exportações líquidas, () e preço internacional ()[[1]](#footnote-1) para cada *commodity j*. Ambos os *datasets* identificam as matérias primas mediante códigos, o que facilita no processo de cruzar os dados. No caso das exportações, as matérias primas são identificadas segundo seus correspondentes códigos no sistema de classificação *Harmonized Commodity Description and Coding System* (HS). No caso dos preços de commodities, a identificação é feita por outro sistema de código do Fundo Monetário Internacional ou codificação própria do autor em alguns casos.

A tabela 1 reúne todas as *commodities* e seus respectivos códigos de exportações e preços. Sempre que houver mais de um código HS em uma mesma linha, suas exportações líquidas foram somadas tendo em vista, haja vista que são produtos diferentes, porém aditivamente agrupáveis sob uma mesma categoria de *commodity*. Portanto, tem-se que:

Em que o subscrito duplo representa o identificador de cada código HS agrupado por sua respectiva *commodity* *j*.

No caso dos preços, cada matéria prima correspondente a um mesmo código, contudo os produtos da madeira representam uma exceção. O *dataset* de exportações não discrimina os bens de madeira sob as mesmas categorias da base de preços, que faz uma distinção entre *hard logs*, *soft logs*, *hard sawnwood*, *soft sawnwood*. Isso exigiu que os dados de preços fossem agregados, o que se deu pela média simples (PWMEAN).

Contudo, essas correspondências não foram realizadas sem ambiguidades. A tabela 2 apresenta possíveis códigos de exportações e preços que eventualmente poderiam substituir ou ser adicionados àqueles tabela 1. Em outras palavras, a escolha dos códigos está aberta a revisão e aprimoramento.

Quadro 1: *Commodities* e sua respectiva codificação

|  |  |  |  |
| --- | --- | --- | --- |
| Commodity | HS Code [Source: UN Comtrade] | Price Code | Price Source |
| Agricultural goods | | | |
| Cotton | 5201 – Cotton; not carded or combed | PCOTTIND: Cotton, Cotton Outlook 'A Index', Middling 1-3/32 inch staple, CIF Liverpool, US cents per pound | IMF |
| Wood | 4401 – Fuel wood, in logs, billets, twigs, faggots or similar forms; wood in chip or particles; sawdust and wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms  4403 –Wood in the rough, whether or not stripped of bark or sapwood, or roughly squared  4406 - Railway or tramway sleepers (cross-ties) of wood | PWMEAN:   * PLOGSK: Hard Logs, Best quality Malaysian meranti, import price Japan, US$ per cubic meter * PSAWMAL: Hard Sawnwood, Dark Red Meranti, select and better quality, C&F U.K port, US$ per cubic meter * PLOGORE: Soft Logs, Average Export price from the U.S. for Douglas Fir, US$ per cubic meter * PSAWORE: Soft Sawnwood, average export price of Douglas Fir, U.S. Price, US$ per cubic meter | IMF |
| Hides | 41 (Raw hides and skins (other than furskins) and leather) | PHIDE: Hides, Heavy native steers, over 53 pounds, wholesale dealer's price, US, Chicago, fob Shipping Point, US cents per pound | IMF |
| Natural rubber | 4001 (Natural rubber, balata, gutta-percha, guayule, chicle and similar gums; in primary forms or in plates, sheets or strip) | PRUBB: Rubber, Singapore Commodity Exchange, No. 3 Rubber Smoked Sheets, 1st contract, US cents per pound | IMF |
| Tobacco | 2401 - Tobacco, unmanufactured; tobacco refuse | PTOBAC (240100.01): Tobacco, unmanufactured, US import unit value ($/t) | UNCTAD |
| Wool | 5101 - Wool, not carded or combed | PWOOLC: Wool, coarse, 23 micron, Australian Wool Exchange spot quote, US cents per kilogram | IMF |
| Food and beverages | | | |
| Banana | 0803 - Bananas, including plantains; fresh or dried | PBANSOP: Bananas, Central American and Ecuador, FOB U.S. Ports, US$ per metric ton | IMF |
| Barley | 1003 - Barley | PBARL - Barley, Canadian no.1 Western Barley, spot price, US$ per metric ton | IMF |
| Beef | 0201 - Meat of bovine animals; fresh or chilled | PBEEF: Beef, Australian and New Zealand 85% lean fores, CIF U.S. import price, US cents per pound | IMF |
| Chicken | 0105 - Poultry; live, fowls of the species Gallus domesticus, ducks, geese, turkeys and guinea fowls | PPOULT: Poultry (chicken), Whole bird spot price, Ready-to-cook, whole, iced, Georgia docks, US cents per pound | IMF |
| Cocoa | 1801 - Cocoa beans; whole or broken, raw or roasted | PCOCO: Cocoa beans, International Cocoa Organization cash price, CIF US and European ports, US$ per metric ton | IMF |
| Coffee | 0901 - Coffee, whether or not roasted or decaffeinated; husks and skins; coffee substitutes containing coffee in any proportion | PCOFFOTM – Coffee, Other Mild Arabicas, International Coffee Organization New York cash price, ex-dock New York, US cents per pound | IMF |
| Corn/Maize | 1005 - Maize (corn) | PMAIZMT: Maize (corn), U.S. No.2 Yellow, FOB Gulf of Mexico, U.S. price, US$ per metric ton | IMF |
| Fish | 160411 - Fish preparations; salmon, prepared or preserved, whole or in pieces (but not minced) | PSALM: Fish (salmon), Farm Bred Norwegian Salmon, export price, US$ per kilogram | IMF |
| Fish meal | 230120 - Flours, meals and pellets; of fish or of crustaceans, molluscs or other aquatic invertebrates | PFSHMEAL: Fishmeal, Peru Fish meal/pellets 65% protein, CIF, US$ per metric ton | IMF |
| Groundnuts | 1202 - Ground-nuts; not roasted or otherwise cooked, whether or not shelled or broken | PGNUTS: Groundnuts (peanuts), 40/50 (40 to 50 count per ounce), cif Argentina, US$ per metric ton | IMF |
| Lamb | 020430 (Meat; of sheep, lamb carcasses and half-carcasses, frozen) | PLAMB: Lamb, frozen carcass Smithfield London, US cents per pound | IMF |
| Olive Oil | 1509 - Olive oil and its fractions; whether or not refined, but not chemically modified | POLVOIL: Olive Oil, extra virgin less than 1% free fatty acid, ex-tanker price U.K., US$ per metric ton | IMF |
| Orange | 080510 - Fruit, edible; oranges, fresh or dried | PORANGUSDM: Oranges per pound in US dollars | FRED |
| Palm Oil | 1511 - Palm oil and its fractions; whether or not refined, but not chemically modified | PPOIL: Palm oil, Malaysia Palm Oil Futures (first contract forward) 4-5 percent FFA, US$ per metric ton | IMF |
| Pork | 0203 - Meat of swine; fresh, chilled or frozen, 020630 - Offal, edible; of swine, fresh or chilled | PPORK: Swine (pork), 51-52% lean Hogs, U.S. price, US cents per pound. | IMF |
| Rapeseed Oil | 1514 - Rape, colza or mustard oil and their fractions; whether or not refined, but not chemically modified | PROIL: Rapeseed oil, crude, fob Rotterdam, US$ per metric ton | IMF |
| Rice | 1006 - Rice | PRICENPQ: Rice, 5 percent broken milled white rice, Thailand nominal price quote, US$ per metric ton | IMF |
| Shrimp | 030613 - Shrimps & prawns, whether/not in shell, frozen | PSHRI: Thailand Whiteleg Shrimp 70 Shrimps/Kg Spot Price | IMF |
| Soybean Meal | 2304 - Oil-cake and other solid residues; whether or not ground or in the form of pellets, resulting from the extraction of soya-bean oil | PSMEA: Soybean Meal, Chicago Soybean Meal Futures (first contract forward) Minimum 48 percent protein, US$ per metric ton | IMF |
| Soybean Oil | 1507 - Soya-bean oil and its fractions; whether or not refined, but not chemically modified | PSOIL: Soybean Oil, Chicago Soybean Oil Futures (first contract forward) exchange approved grades, US$ per metric ton | IMF |
| Soybeans | 1201 - Soya beans, whether or not broken | PSOYB: Soybeans, U.S. soybeans, Chicago Soybean futures contract (first contract forward) No. 2 yellow and par, US$ per metric ton | IMF |
| Sugar | 1701 - Cane or beet sugar and chemically pure sucrose, in solid form | PSUGAISA: Sugar, Free Market, Coffee Sugar and Cocoa Exchange (CSCE) contract no.11 nearest future position, US cents per pound | IMF |
| Sunflower Seed Oil | 1512 - Sun-flower seed, safflower or cotton-seed oil and their fractions; whether or not refined, but not chemically modified | PSUNO: Sunflower oil, Sunflower Oil, US export price from Gulf of Mexico, US$ per metric ton | IMF |
| Tea | 0902 - Tea | PTEA: Tea, Mombasa, Kenya, Auction Price, US cents per kilogram, From July 1998, Kenya auctions, Best Pekoe Fannings. Prior, London auctions, c.i.f. U.K. warehouses | IMF |
| Wheat | 1001 - Wheat and meslin | PWHEAMT: Wheat, No.1 Hard Red Winter, ordinary protein, Kansas City, US$ per metric ton | IMF |
| Energy | | | |
| Crude Oil / Petroleum | 2709 - Petroleum oils and oils obtained from bituminous minerals; crude | POILAPSP: Crude Oil (Petroleum), Price Index, 2005 = 100, simple average of three spot prices; Dated Brent West Texas Intermediate, and the Dubai Fatel | IMF |
| Coal | 2701 - Coal; briquettes, ovoids and similar solid fuels manufactured from coal | PCOALAU: Coal, Australian thermal coal, 12,000- btu/pound, less than 1% sulfur, 14% ash, FOB Newcastle/Port Kembla, US$ per metric ton | IMF |
| Natural Gas | 2711 - Petroleum gases and other gaseous hydrocarbons | PNGASEU - Natural Gas, Netherlands TTF Natural Gas Forward Day Ahead, US$ per Million Metric British Thermal Unit | IMF |
| Metals | | | |
| Aluminium | 2606 - Aluminium ores and concentrates  7601 - Aluminium; unwrought | PALUM: Aluminum, 99.5% minimum purity, LME spot price, CIF UK ports, US$ per metric ton | IMF |
| Copper | 2603 - Copper ores and concentrates  7402 - Copper; unrefined, copper anodes for electrolytic refining | PCOPP: Copper, grade A cathode, LME spot price, CIF European ports, US$ per metric ton | IMF |
| Gold | 7108 - Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form | PGOLD: Gold, Fixing Committee of the London Bullion Market Association, London 3 PM fixed price, US$ per troy ounce | IMF |
| Iron ore | 2601 - Iron ores and concentrates; including roasted iron pyrites | PIORECR - China import Iron Ore Fines 62% FE spot (CFR Tianjin port), US dollars per metric ton | IMF |
| Lead | 2607 - Lead ores and concentrates | PLEAD - Lead, 99.97% pure, LME spot price, CIF European Ports, US$ per metric ton | IMF |
| Nickel | 2604 - Nickel ores and concentrates | PNICK - Nickel, melting grade, LME spot price, CIF European ports, US$ per metric ton | IMF |
| Tin | 2609 - Tin ores and concentrates  8001 - Tin; unwrought | PTIN - Tin, standard grade, LME spot price, US$ per metric ton | IMF |
| Uranium | 2612 - Uranium or thorium ores and concentrates | PURAN - Uranium, NUEXCO, Restricted Price, Nuexco exchange spot, US$ per pound | IMF |
| Zinc | 2608 - Zinc ores and concentrates  7901 - Zinc; unwrought | PZINC: Zinc, high grade 98% pure, US$ per metric ton | IMF |

Fonte: Elaboração própria.

Quadro 2: Códigos alternativos àqueles apresentados no Quadro 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Commodity | HS/Type | HS Code | Price/Type | Price Code |
| Wool |  |  | Substitute | PWOOLF - Wool, fine, 19 micron, Australian Wool Exchange spot quote, US cents per kilogram |
| Chicken | Addition | 1602 - Prepared or preserved meat, meat offal, blood or insects |  |  |
| Coffee |  |  | Substitute | PCOFFROB – Coffee, Robusta, International Coffee Organization New York cash price, ex-dock New York, US cents per pound |
| Fish | Substitute | 1604 - Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs |  |  |
| Fish meal | Substitute | 2301 - Flours, meal and pellets, of meat or meat offal, of fish or of crustaceans, molluscs or other aquatic invertebrates, unfit for human consumption; greaves |  |  |
| Lamb | Substitute | 0204 - Meat of sheep or goats; fresh, chilled or frozen |  |  |
| Pork | Addition | 020630 - Offal, edible; of swine, fresh or chilled |  |  |
| Sugar |  |  | Substitute | PSUGAUSA - Sugar, U.S. import price, contract no.14 nearest futures position, US cents per pound (Footnote: No. 14 revised to No. 16) |
| Crude oil / Petroleum |  |  | Substitute | POILBRE: Crude Oil (petroleum), Dated Brent, light blend 38 API, fob U.K., US$ per barrel  POILDUB: Crude Oil (petroleum), Dubai Fateh Fateh 32 API, US$ per barrel  POILWTI: Crude Oil (petroleum), West Texas Intermediate 40 API, Midland Texas, US$ per barrel |
| Coal |  |  | Substitute | PCOALSA: Coal, South African export price, US$ per metric ton |
| Natural Gas |  |  | Substitute | PNGASJP - Natural Gas, Indonesian Liquefied Natural Gas in Japan, US$ per Million Metric British Thermal Unit  PNGASUS - Natural Gas, Natural Gas spot price at the Henry Hub terminal in Louisiana, US$ per Million Metric British Thermal Unit |

Fonte: Elaboração própria.

1. Os subscritos *j*, *t* e *i* correspondem, respectivamente, aos identificadores de *commodity*, ano e país. [↑](#footnote-ref-1)