

## Information for Data Set

### A Decomposition of Global Linkages in Financial Markets Over Time

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#### INFORMATION FOR DATASET USED TO ESTIMATE FACTOR MODEL

All data is weekly and taken from Datastream

Variables with a “\_Ch” or “\_Ret” are the changes or returns, respectively

Variables followed by “\_MA” are the 2-week moving average returns

*Date*: Date for given variable (weekly)

*Date\_num*: A numerical value for the date

*Period*: A number created to identify the “group” of the date

**\*\*StkRetUSD**: Stock market return for country \*\* expressed in US dollars

**\*\*StkRetLOC**: Stock market return for country \*\* expressed in local currency

**\*\*BonRetUSD**: Stock market return for country \*\* expressed in US dollars

**\*\*BonRetLOC**: Stock market return for country \*\* expressed in local currency

**\*\*ERChUSD**: Change in exchange rate for country \*\*, expressed in local currency/USD

*WoStkRetUSD*: Return for World Stock Market Index in USD, calculated by MSCI

*Oil\_Ch*: Change in Brent Current Oil price, FOB, in \$ per barrel

*Gold\_Ch*: Change in price of gold bullion, in \$/oz, on the London Bullion Market

*Comm\_Econ\_Ch*: Change in index of commodities, calculated by the Economist, USD

*Comm\_DJ\_Ch*: Change in commodity index calculated by Dow Jones

*Disc\_US*: Overnight discount rate in the US

*Disc\_UK*: Overnight discount rate in the UK

*Disc\_JP*: Overnight discount rate in Japan

*Disc\_FR*: Overnight discount rate in France

*Disc\_GE*: Overnight discount rate in Germany

*PC1* Principal component of US, UK, Japanese & German interest rates

*PC2* Principal component of US, UK, Japanese & ECB interest rates

*PC3* Principal component of US, UK & Japanese interest rates

*Sectoral Indices*: MSCI industrial sector indices (Morgan Stanley Capital International)

Original Indices: Based on 45 stock markets around world. Indices in US dollars.

1	Sec_Aero	Aerospace & Military Tech
2	Sec_Appl	Appliances & Household durables
3	Sec_Auto	Automobiles
4	Sec_Bank	Banking
5	Sec_Publ	Broadcasting & Publishing
6	Sec_Build	Building Materials & Comp
7	Sec_Bus	Business & Public Service
8	Sec_Chem	Chemicals

9	Sec_Cons	Construction & Housing
10	Sec_Data	Data Processing & Reproduction
11	Sec_Elec	Electrical & Electronics
12	Sec_ElCom	Electronic Components
13	Sec_EnEq	Energy Equipment & Services
14	Sec_EnSo	Energy Sources
15	Sec_Food	Food & Household Products
16	Sec_For	Forest Products & Paper
17	Sec_IndCom	Industrial Components
18	Sec_Insur	Insurance
19	Sec_Fin	Financial Services
20	Sec_Gold	Gold Mines
21	Sec_Health	Health & Personal Care
22	Sec_Leis	Leisure & Tourism
23	Sec_Mach	Machinery & Engineering
24	Sec_Merch	Merchandising
25	Sec_Met	Metals- Non-Ferrous
26	Sec_Stl	Metals-Steel
27	Sec_Mats	Mis Materials & Commodities
28	Sec_Multi	Multi-Industry
29	Sec_RIEs	Real Estate
30	Sec_Rec	Recreation, Other Consumer Goods
31	Sec_Tele	Telecommunications
32	Sec_Txt	Textiles & Apparel
33	Sec_Air	Transportation-Airlines
34	Sec_RR	Transportation-road & rail
35	Sec_Ship	Transportation-shipping
36	Sec_Util	Utilities-electrical & gas

These 36 indices are then combined or dropped to construct 14 sectoral indices (process and definitions described in paper appendix); the resulting sectors used for the main analysis are denoted by Sec3\*\*\* and are:

*Sec3Auto*  
*Sec3Chem*  
*Sec3Consum*  
*Sec3Elec*  
*Sec3Energy*  
*Sec3Forest*  
*Sec3Indust*  
*Sec3Finance*  
*Sec3Leisure*  
*Sec3Merchand*  
*Sec3Metal*  
*Sec3Telecom*  
*Sec3Text*  
*Sec3Transp*

**INFORMATION FOR DATASET USED TO ESTIMATE BILATERAL LINKAGE MODEL**

**For Large Countries *c*: country number, country, country abbreviations**

12.	France	FR
13.	Germany	GE
23.	Japan	JP
42.	UK	UK
43.	US	US

**Full List of all Countries *i* and *c*, plus abbreviations**

1	Argentina	AR
2	Australia	AU
3	Austria	OE
4	Belgium	BE
5	Brazil	BR
6	Canada	CA
7	Chile	CL
8	China	CH
9	Colombia	CB
10	Denmark	DE
11	Finland	FI
12	France	FR
13	Germany	GE
14	Greece	GR
15	Hong Kong	HK
16	Hungary	HU
17	Iceland	IC
18	India	ID
19	Indonesia	IN
20	Ireland	IR
21	Israel	IS
22	Italy	IT
23	Japan	JP
24	Korea	KO
25	Kuwait	KU
26	Malaysia	MA
27	Mexico	ME
28	Morocco	MO
29	Netherlands	NE
30	New Zealand	NZ
31	Norway	NO
32	Philippines	PH
33	Poland	PO
34	Portugal	PT
35	Singapore	SI

36	South Africa	SA
37	Spain	SP
38	Sweden	SW
39	Switzerland	SZ
40	Thailand	TH
41	Turkey	TU
42	UK	UK
43	US	US
44	Venezuela	VE

### **Codes for the years:**

The flow variables are taken for the current year, the stock variables are taken from start of current year or end of previous year

*1985-2000* Data for the individual year 1985 through 2000

- 1* Data for the full period from 1985-2000, averaged
- 2* Data for the full period from 1994-2000, averaged
- 10* Data for the full period from 1986-1990, averaged (mainly for stock markets)
- 11* Data for the full period from 1991-1995, averaged (mainly for stock markets)
- 12* Data for the full period from 1996-2000, averaged (mainly for stock markets)
- 20* Data for the full period from 1994-1997, averaged (mainly for bond markets)
- 21* Data for the full period from 1998-2000, averaged (mainly for bond markets)

Variables with “yr\*\*” are dummies for the year \*\*; for example yr1985 is a dummy equal to 1 if the year is 1985; yr1 is a dummy for the period 1985-2000

### **Definitions for Annual Data**

*Included\_pair*: A dummy equal to 1 if the pair of countries is included in the analysis

*ctry\_pairs*: concatenate code for country *i* and code for country *c*

*match1*: Code to match data; format is country *i* number\_country *c* number\_year

*match2*: Code used to match data; number for country *i* \_year

For all of following variables:

*\_p*: Variables followed by “\_p” are expressed as percents; so *ImportDem\_p* is *ImportDem/100*

*\_sq*: Variables followed by “\_sq” are the squared terms

*\_dif*: Variables with a “dif” are first differences

*\_lag*: Variables with a “lag” are lagged by 1 period

*GDP*: GDP in '000 of US dollars; source: World Development Indicators

*Gdp\_i*: GDP for country *i*

*Gdp\_c*: GDP for country *c*

*ImportDem*: Import Demand, measured by imports into country *c* from country *i* as a share of country *i* GDP (multiplied by 100)  
*TradeComp*: Trade competition from country *c* with country *i* based on 4-digit SIC codes; measured as exports from country *c* as a share of world exports in each 4-digit SIC group multiplied exports from country *i* as a share of country *i* GDP; product of these ratios is multiplied by each SIC group and divided by max to create an index  
*BankLend*: Bank Lending, measured as BIS bank lending from country *c* into country *i* as a share of country *i* GDP (multiplied by 100)  
*ForeignInv*: Foreign Investment, measured as the stock of foreign investment by country *c* in country *i* as a share of country *i* GDP (multiplied by 100)

*reg\_americas*: Dummy equal to 1 if country is in the Americas region  
*reg\_asia*: Dummy equal to 1 if country is in the Asia region  
*reg\_europe*: Dummy equal to 1 if country is in the Europe region  
*reg\_meafrica*: Dummy equal to 1 if country is in the Middle East and Africa region  
(See Table in paper for regional divisions)

*oilgas\_exp*: Total exports in given year (in USD) of oil and gas (SITC codes 33 & 34)  
SITC code 33 = petroleum, petroleum products & related materials  
SITC code 34 = gas, natural and manufactured  
*oilgas\_GDP*: Ratio of *oilgas\_exp* to GDP  
*oilgas\_dum*: Dummy variable equal to 1 if country exports of oil&gas/GDP > 5%

*low\_inc*: Dummy variable equal to 1 if is a low income country, based on WDR, 2000  
*mid\_inc*: Dummy variable equal to 1 if is a middle income country, based on WDR, 2000  
*lowmid\_inc*: Dummy variable equal to 1 if is a low or middle income country, based on WDR, 2000  
*high\_inc*: Dummy variable equal to 1 if is a high income country, based on WDR, 2000

*crisis\_bank*: Dummy variable equal to 1 if was a systemic banking crisis (as defined by Caprio & Klingebiel)  
*crisis\_cur*: Dummy variable equal to 1 if was a currency crisis (defined as a 25% fall in USD ER in any 4 week period)

*outlier1*: Dummy equal to 1 if one of the variables included in the base equation for that observation is an outlier; define outlier as equal to mean +/- 3 standard deviations for sample of included pairs  
*outlier2*: Dummy equal to 1 if one of the variables included in the base equation for that observation is an outlier; define outlier as equal to mean +/- 5 standard deviations for sample of included pairs

*IMFCode\_ctryi*: IMF/World Bank numerical code for country *i*  
*IMFCode\_ctryc*: IMF/World Bank numerical code for country *c*

## **Definitions: Capital Control Data**

From Kaminsky-Schmukler (2002), 3 is more restricted & 1 is freer

*KS\_DFS*: Capital controls measure for domestic financial system  
*KS\_KA*: Capital controls measure for the capital account  
*KS\_SM*: Capital controls measure for the stock market

From Edison-Warnock (2002)

*EW\_FOR*S: Foreign ownership restrictions-smoothed  
*EW\_FOR*U: Foreign ownership restrictions-unsmoothed

From KA open measure

*KA\_Open*: From Chinn and Ito (2002); see appendix in paper

## **Betas**

Calculated in the factor model (equation 1) and then used for the bilateral linkage regressions (equation2)

*B\_WS\_ST\_USD* Beta, with sectors, stock markets, USD  
*B\_WS\_ST\_LOC* Beta, with sectors, stock markets, local currency  
*B\_WS\_BO\_USD* Beta, with sectors, bond markets, USD  
*B\_WS\_BO\_LOC* Beta, with sectors, bond markets, local currency  
*B\_NS\_ST\_USD* Beta, no sectors, stock markets, USD  
*B\_NS\_ST\_LOC* Beta, no sectors, stock markets, local currency  
*B\_NS\_BO\_USD* Beta, no sectors, bond markets, USD  
*B\_NS\_BO\_LOC* Beta, no sectors, bond markets, local currency

*B\_LS\_ST\_USD* Beta, large set of sectors (orig 37), stocks, USD  
*B\_LS\_ST\_LOC* Beta, large set of sectors (orig 37), stocks, local currency  
*B\_LS\_BO\_USD* Beta, large set of sectors (orig 37), bonds, USD  
*B\_LS\_BO\_LOC* Beta, large set of sectors (orig 37), bonds, local currency

*B\_NGWS\_ST\_USD* Beta with no global factors, with sectors, stocks, USD  
*B\_NGWS\_ST\_LOC* Beta with no global factors, with sectors, stocks, local cur  
*B\_NGWS\_BO\_USD* Beta with no global factors, with sectors, bonds, USD  
*B\_NGWS\_BO\_LOC* Beta with no global factors, with sectors, bonds, local cur

*B\_NGNS\_ST\_USD* Beta with no global factors, no sectors, stocks, USD  
*B\_NGNS\_ST\_LOC* Beta with no global factors, no sectors, stocks, local cur  
*B\_NGNS\_BO\_USD* Beta with no global factors, no sectors, bonds, USD  
*B\_NGNS\_BO\_LOC* Beta with no global factors, no sectors, bonds, local cur

*B\_NS\_XX\_ST\_USD* Beta, no sectors, excludes x-country for UK &GE, stocks, USD  
*B\_NS\_XX\_ST\_LOC* Beta, no sectors, excludes x-country for UK &GE, stocks, loc  
*B\_NS\_XX\_BO\_USD* Beta, no sectors, excludes x-country for UK &GE, bonds, USD  
*B\_NS\_XX\_BO\_LOC* Beta, no sectors, excludes x-country for UK &GE, bonds, loc

**Definitions: Gravity Model Data**

All following variables taken from Andy Rose (2002), “Do We Really know that the WTO Increases Trade?”, NBER Working Paper #9273, and available on Rose’s website.

*border*: Binary variable equal to 1 if countries *i* and *c* share a land border, originally from CIA World Factbook

*common\_lang*: Binary variable equal to 1 if *i* and *c* have a common language, originally from CIA World Factbook

*colony*: Binary variable equal to 1 if *i* ever colonized *c* (or vice versa), originally from CIA World Factbook

*ln\_distance*: Natural log of the distance between countries *i* and *c*, with distance based on latitude and longitude data from CIA World Factbook

*real\_GDP\_i*: Real GDP (in constant 1995 US dollars) of country *i*, from WDI

*real\_GDP\_c*: Real GDP (in constant 1995 US dollars) of country *c*, from WDI

*ln\_real\_GDP\_ic*: Ln of the Product of *real\_GDP\_i* and *real\_GDP\_c*