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|  **Research Methodology and Skills** |
| [**Links**](http://iia.snu.ac.kr/cskim/bookmark.htm)[**Bulletin Board**](http://sias.snu.ac.kr/bbs/boardlist.asp?BoardName=methods) http://iia.snu.ac.kr/cskim/images/butto04a.gif**Course Objective**         The objective of the course is to provide the students with the tools with which to analyze the issues in international and area studies. In the first part of the course, students will learn important concepts of statistics and acquire techniques to use Excel and other statistics program. In the second part, students will learn how to calculate useful indices and statistics as well as to analyze the relationship among various variables in international and area studies.  http://iia.snu.ac.kr/cskim/images/butto04a.gif**Teaching Methods**http://iia.snu.ac.kr/cskim/images/pin03c.gifLectures by the professor http://iia.snu.ac.kr/cskim/images/pin03c.gifGroup and individual assignmentshttp://iia.snu.ac.kr/cskim/images/pin03c.gifPresentations by the students http://iia.snu.ac.kr/cskim/images/pin03c.gifDiscussions  http://iia.snu.ac.kr/cskim/images/butto04a.gif**Evaluation**http://iia.snu.ac.kr/cskim/images/pin03c.gifGroup Assignments: 40%http://iia.snu.ac.kr/cskim/images/pin03c.gifIndividual Assignments: 40%http://iia.snu.ac.kr/cskim/images/pin03c.gifAttendance and class participation: 20%  |
| **Class Sequence** |
|  Week 1. Introduction, Concepts, Datasets Week 2 & 3. Excel - cursor, $$, chart, sort, filter, paste value, transpose, sumif, vlookup, pivot table, . xls vs .ppt vs .doc, etc.     [[dataset0]](http://iia.snu.ac.kr/cskim/methods/sitc3d.xls)       [[dataset1]](http://iia.snu.ac.kr/cskim/methods/excel.xls)

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| Individual assignment 1. Choose any country with a significant number of patents in the US, and reproduce the following graph, which is a graph using Korea's patents in the US. [Korea's Share in US Patents](http://iia.snu.ac.kr/cskim/methods/patents.ppt)Data source: [US Patent and Trademark Office](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/clsstc/stc_cl_gd.htm) |

Week 4. Statistics - Average, Variance, Standard Deviation, Coefficient of variation [[lecture]](http://iia.snu.ac.kr/cskim/methods/Statistics.ppt)

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| Individual assignment 2 1) Calculate ⓐ the average (arithmetic mean) and ⓑ the standard deviation of the growth rates of ⑴ each industrialized country and ⑵ each country in any regional group(s) for 1970-2000. 2) Calculate the average and the standard deviation of ⓐ and the average of ⓑ for ⑴ and ⑵.3) Take two developing and two industrialized countries and calculate the average growth rate using geometric mean for the same period. Compare with the arithmetic mean.4) Interpret the results.Data source: [World Economic Outlook Databases](http://www.imf.org/external/ns/cs.aspx?id=28) |

Week 5.  [[lecture]](http://iia.snu.ac.kr/cskim/methods/inequality.ppt) related with the individual assignment 1http://iia.snu.ac.kr/cskim/images/ball02e.gifECLA, (2002), Globalization and Development, Chapter 3. "Inequalities and Asymmetries in the Global Order." ([pdf](http://www.eclac.org/publicaciones/SecretariaEjecutiva/3/LCG2157SES293I/Globalization-Chap3.pdf))Michalopoulos, Constantine, (1999), "Trade Policy and Market Access Issues for Developing Countries," World Bank, Policy Research Working Papers #2214. ([pdf](http://wbln0018.worldbank.org/research/workpapers.nsf/bd04ac9da150d30385256815005076ce/a70066326b8be18c85256818005b9fb6/%24FILE/wps2214.pdf))Week 6, 7. Free Trade Agreement: Theory and Practice [[lecture]](http://iia.snu.ac.kr/cskim/methods/FTA.ppt)http://iia.snu.ac.kr/cskim/images/ball02e.gifRevealed Comparative Advantage (RCA), Intensity of Trade (IT), Trade Orientation (RO) [[lecture]](http://iia.snu.ac.kr/cskim/methods/Mercosur.ppt)http://iia.snu.ac.kr/cskim/images/ball02e.gifYeats, S. (1997), "Does MERCOSUR's Trade Performance Raise Concerns about the Effects of Regional Trade Arrangements?" World Bank Policy Research Working Paper #1729. ([pdf](http://www.worldbank.org/research/trade/pdf/wp1729.pdf))

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| Individual assignment 3. Update three rows of the following table for the years 1995 and 2000, and interpret it. (Information: Direction of Trade Statistics: DOTS, [KOTIS](http://kotis.kita.net/) or COMTRADE dataset (PCTAS))**IR(intra-regional exports/total exports) andShare of RI scheme in total world exports**

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|    | Founded  | 1960  | 1970  | 1975  | 1985  | 1990  |
| ANZCERTA  | 1983  | 5.72.4  | 6.12.1  | 6.21.7  | 7.01.6  | 7.61.5  |
| EC  | 1957  | 34.524.9  | 51.039.0  | 50.035.9  | 54.535.6  | 60.441.4  |
| CUFTA  | 1989  | 26.521.9  | 32.820.5  | 30.616.8  | 38.016.7  | 34.015.8  |
| ASEAN  | 1967  | 4.42.6  | 20.72.1  | 15.92.6  | 18.43.9  | 18.64.3  |
| ANDEAN PACT  | 1969  | 0.72.9  | 2.01.6  | 3.71.6  | 3.41.2  | 4.60.9  |
| CACM  | 1961  | 7.00.4  | 25.70.4  | 23.30.3  | 14.70.2  | 14.80.1  |
| LAFTA  | 1960/80  | 7.96.0  | 9.94.4  | 13.63.5  | 8.34.7  | 10.63.4  |

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Week 8. Statistics - Correlation and Regression[[lecture]](http://iia.snu.ac.kr/cskim/methods/regression.ppt)    [[dataset2]](http://iia.snu.ac.kr/cskim/methods/regdata1.xls)    [[dataset3]](http://iia.snu.ac.kr/cskim/methods/unofficial.xls)    [[readme2]](http://iia.snu.ac.kr/cskim/methods/unofficial.doc)[Macroeconomics and growth datasets (World Bank)](http://econ.worldbank.org/programs/macroeconomics/datasets/)Week 9. Presentation of the group assignment A      Week 10. (1) STATA (2) Gravity Model  [[lecture]](http://iia.snu.ac.kr/cskim/methods/gravity.ppt)Cernat, Lucian (2001) "Assessing Regional Trade Arrangements: Are South-South RTAs More Trade Diverting?" United Nations [(pdf)](http://econwpa.wustl.edu:8089/eps/it/papers/0109/0109001.pdf)

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| Individual assignment 4 Download data from [World Development Indicators](http://www.worldbank.org/data/dataquery.html), run a meaningful regression and interpret it. -country: select all-series: dependent and independent variables-time: 1 year-format report: row-country, column-seriesInclude hypothesis, explanation of the variables, regression results, interpretation. |

Week 11. Presentation of the group assignment BWeek 13. Intra-industry trade(IIT), Export Similarity Index(ESI), Structural Change Index (SCI)   [[lecture]](http://iia.snu.ac.kr/cskim/methods/IntraIndustry.ppt) [[dataset7]](http://iia.snu.ac.kr/cskim/methods/iit_esi_sci.xls)

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| Individual assignment 6The intra-industry trade index of home country with a country j for an industry i is:GLij = 1 - |Xij - Mij|/(Xij + Mij)The intra-industry trade index of home country with a country j is:GLj = ∑i{(Xij + Mij) - |Xij - Mij|}/∑i(Xij + Mij)1) Calculate the GL index of Korea with any other two countries (at SITC 3 digit level). Interpret it.2) In a separate worksheet, include the peer evaluation of your group members in a scale of 1 to 10. |

Week 14. Production Sharing, Herfindahl-Hirschman Index (HHI)  [[lecture]](http://iia.snu.ac.kr/cskim/methods/prodshare%26hhi.ppt) [[dataset8]](http://iia.snu.ac.kr/cskim/methods/sitc2009.xls) http://iia.snu.ac.kr/cskim/images/ball02e.gifYeats, Alexander, "Just How Big is Global Production Sharing in East Asia" The World Bank, Jan. 1998.http://iia.snu.ac.kr/cskim/images/ball02e.gifUNCTAD, (2002), "Export Dynamism and Industrialization in Developing Countries," and "Competition and the Fallacy of Composition," [Trade and Development Report 2002](http://www.unctad.org/en/docs/tdr2002_en.pdf), Ch. 3 & 4.Week 15. Constant Market Share, Shift share analysis  [[lecture]](http://iia.snu.ac.kr/cskim/methods/ShiftShare.ppt) [[dataset9]](http://iia.snu.ac.kr/cskim/methods/1d_allcountries.XLS)

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| Individual assignment 7Using constant market share analysis, decompose the growth of exports of any two countries, into three components. (SITC 3 digit level, for 1995~1999 or 1997~2001) Interpret. |

(skip). Logistic (Probit) Regression Model  [[lecture]](http://iia.snu.ac.kr/cskim/methods/logit.ppt)   [[dataset5]](http://iia.snu.ac.kr/cskim/methods/athome.sav)  [[graph]](http://iia.snu.ac.kr/cskim/methods/logit_probit_graph.xls)[The Emerging American Voter: An Examination of the Increase in the Black Vote in November 1998](http://www.census.gov/population/documentation/twps0044/gifshow/index.html)

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| Individual assignment 5 Using the following socio-economic dataset and codebook, run a meaningful logistic regression and interpret it.        ◇[[dataset6]](http://iia.snu.ac.kr/cskim/methods/HEALTH.SAV)       ◇[[codebook]](http://iia.snu.ac.kr/cskim/methods/codebook.hwp)       ◇[[codebook(Eng)]](http://iia.snu.ac.kr/cskim/methods/ecodebook.doc) |

(skip). Panel regression  [[lecture]](http://iia.snu.ac.kr/cskim/methods/panel.ppt)   [[dataset11]](http://iia.snu.ac.kr/cskim/methods/panel.xls)(skip) Time series  [[dataset10]](http://iia.snu.ac.kr/cskim/methods/timeseries97.xls) (skip). Pollution-intensive, High-Tech, and IT industries   [[lecture1]](http://iia.snu.ac.kr/cskim/methods/Enviroshort.ppt)   [[lecture2]](http://iia.snu.ac.kr/cskim/trade/EnviLocation.ppt)http://iia.snu.ac.kr/cskim/images/ball02e.gifLevinson, Arik, (1997) "Environmental Regulations and Industry Location: International and Domestic Evidence," in Jagdish Bhagwati and Robert E. Hudec (eds.), Fair Trade and Harmonization - Prerequisites for Free Trade?, The MIT Press.(skip). Presentation of the group assignment C |
| **Group Assignments** |
|  A. Related with trade (due on the 7th week)1) Calculate the [Specialization Index and Revealed Comparative Advantage Index](http://iia.snu.ac.kr/cskim/trade/assign1.htm) of China (in SITC 3 digit level). Analyze. (for example, you can analyze Chinese industries with industry classification by factor contents and technology intensity ([classification file](http://iia.snu.ac.kr/cskim/trade/techno.xls)) or SITC 1 digit level, etc)(UN COMTRADE dataset)2) Calculate the same indices for a country which may have some economic relationship with China. Analyze.  B.  Gravity Model (due on 10th week)The Gravity Model predicts that the trade volume between two countries increases with the economic size of the two countries and decreases with the geographic distance between the countries. That is,                    Tij = A · ( YiYj / Dij )where Tij and Dij are, respectively, the trade (or exports or imports) volume and the distance between the country i and the country j, Yi is the GDP of the country i, and A is a coefficient. To run a regression for the Korean case, the function can be modified as following:                     LnTij = α + β1Ln[Yj] + β2LnPj + β3LnDij + εij or                 LnTij = α + β1Ln[Yj/Pj] + β2LnPj + β3LnDij + εij where country i is Korea, and Pj is the population of the country j. You can add more variables as foreing direct investment (FDI), overseas direct investment (ODI), number of Koreans living in that country, memebership of a regional trade arrangements, etc. Collect the data required for the regression, run the regression, and derive the expected trade volume. Calculate the actual trade volume as a ratio of expected trade volume for each trade partner.

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|  Hint:  (1) When the value of any variable(x) is 0, you can not take the logarithm. In that case, you may add 1 and take ln(x+1). (2) You can calculate the predicted value, or get it from SPSS. (3) export = exp[ln(export)] |

Reference on Gravity Model: ["Assessing Regional Trade Arrangements: Are South-South RTAs More Trade Diverting?"](http://econwpa.wustl.edu:8089/eps/it/papers/0109/0109001.pdf)Information on Distance: [International Trade Data](http://www.macalester.edu/research/economics/PAGE/HAVEMAN/Trade.Resources/TradeData.html)Information on GDP and Population: <http://www.worldbank.org/data/dataquery.html>Information on Trade: [KITA](http://db.kita.net/)Information on overseas direct investment: [The Export-Import Bank of Korea](http://www.koreaexim.go.kr/)Information on FDI to Korea: [MOCIE](http://www.mocie.go.kr/user.tdf?a=common.IframeApp&c=2001&mc=P_03_01_07&url=http://insc.kisc.org:8080/stt2/stt001.jsp) C. Logistic Regression (due on 13th week)1) Take two Korean companies (for example, Samsung, [www.sec.co.kr](http://www.sec.co.kr), LG,  [www.lge.co.kr](http://www.lge.co.kr), Hyundai, [www.hyundai-motor.com](http://www.hyundai-motor.com), etc) and two companies from some other country (for example, Japan or U.S.). From the homepage of each company collect the data about the location (country) of subsidiaries, branches, R&D centers, and so on. 2) Collect the data of (country) variables that may have influence on the location decision of subsidiaries, branches, R&D centers, etc. 3) Using logistic regression, analyze which variables are the most important factors in deciding the location of subsidiaries, branches, R&D centers, etc.4) Interpret  |
| [**Links**](http://iia.snu.ac.kr/cskim/bookmark.htm)[**Bulletin Board**](http://sias.snu.ac.kr/bbs/boardlist.asp?BoardName=methods)  |