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# **Applied International Macroeconomics**

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## I. INTRODUCTION

**Description.** The course teaches to analyze economic performance of a country for the purposes of business and policy decisions. The course is of a purely applied nature, a “How to?” course. It requires 20 hours of class work (4 hours a day) and a final essay. Each module consists of a lecture and a computer-based lab, and addresses three questions:

- How to find and interpret key macroeconomic statistical aggregates?
- How to analyze macroeconomic data using simple spreadsheet tools?
- How to identify macroeconomic problems in real time and find their possible solutions?

**Who should take this course?** The course is designed for graduate and MBA students at universities and business schools who seek employment as economists in the private or public sector. Examples of potential employers include:

- Investment banks (e.g., Bank of America Merrill Lynch, Citigroup, Credit Suisse, UBS);
- Hedge funds, insurance, and financial firms (PIMCO, Berkshire Hathaway, Soros Fund);
- International organizations (IMF, World Bank, WTO, UN, ECB, OECD, BIS);
- Government (Fed, central banks, Dept. of the Treasury, ministries of finance);
- Consulting (Boston Consulting, McKinsey, Cambridge Group);
- Information portals (Bloomberg, Economist, Financial times, Wall Street Journal);
- Rating agencies (S&P, Fitch, Moody's);
- International affairs (development assistance, military, non-profit).

**Prerequisites.** Introductory macroeconomics and microeconomics, Microsoft Excel, English (required). International economics, statistics, and econometric.

**Evaluation.** Performance during the course is assessed based on the following criteria:

- *Class participation* (20%). Good class participation includes staying on top of current macroeconomic events and ability to share examples and offer their analysis in each of the discussed macro areas.
- *Case studies* (30%). Ten Excel-based cases will be discussed: saving-investment balance, real growth, inflation, budget, public debt, monetary survey, interest rate, balance of payments, exchange rate, macroeconomic program.
- *Final essay* (50%). A 4-5-page essay on the macroeconomic situation of a selected country is required. The analysis should be based on the current data presented in 4 tables (national accounts and prices, fiscal operations, monetary survey and balance of payments) and include diagnostics of past problems, the analysis of the current situation, and medium-term projections. The conclusions should contain recommendations on an investment strategy for a private sector company in the selected country and policy measures to be taken by its government to correct the identified problems.

## II. SYLLABUS

### Day 1. Macroeconomics in an open economy

#### *Applied international economics (2 hours)*

*Aggregates.* An open and a closed economy. Components of international economics. Basic concepts: flows and stocks; economic agents; economic sectors, transactions and other flows; assets and liabilities; nominal and real values; public and private sectors; residents and nonresidents. Economic agents: households, firms, government, the rest of the world. The economic process: production, distribution, and use. Key macroeconomic identities: saving-investment balance, balance of payments, savings, government budget, monetary sector.

*Data.* Macroeconomic statistics: tables, graphs, descriptive statistics, correlation.

*Analytics.* Macroeconomic operationalism: heuristic approach in macroeconomics.

Programming: real, financial, structural. Analysis: cross-sectional and time-series.

Macroeconomic options: fixed and flexible exchange rate, with and without capital mobility.

#### *Macroeconomic programming (2 hours)*

*Aggregates.* Macroeconomic framework: diagnostics, analysis, forecasting. Macroeconomic sectors: real, fiscal, monetary and external. Time periods: historical, estimated, current, short-term, medium-term, long-term. Links among sectors. Inter-sectoral consistencies.

Assumptions: global, regional, country-specific, sectoral commodity. Macroeconomic program: goals, types, structure, components.

*Data.* Sources of information on countries' economic programs, SDDS, GDDS.

*Analytics.* Financial program and growth-oriented program. Scenarios: baseline, alternative, shock. Sensitivity analysis. Program modes: positive, normative, adjustment. Adjustment: fiscal, monetary, external. Quadrant of macroeconomic policy instruments. "Impossible trinitities": monetary, fiscal, and capital. External stability: external balance and internal balance. Policy mix.

### *References*

#### *Main*

<http://www.imf.org/en/Data#RSSS>

1. SNA (2013) ch.2 A-C.
2. BoP (2010), ch.14 A-B.

#### *Additional*

3. Montiel (2009), ch.4.
4. Hoover (2011), ch. I, V,VI.
5. Rao - Nallari (2001), ch. 4.

*Cases 1 and 2*

## Day 2. Real and nominal economy

### *Output and income (2 hours)*

*Aggregates.* Aggregate demand and aggregate supply. The economic process: output, intermediate consumption, value added, operating surplus, primary income, disposable income, final consumption, saving, gross capital formation, consumption of fixed capital, change in inventories, net lending, financing. GDP, GNI, GDI. Real and nominal GDP. Deflator: price and quantity deflation. Savings: domestic and national. Real income. Trading losses and gains.

*Data.* BEA, WEO, OECD, PGI, national statistics. Comparability and treatment.

*Analytics.* Projections of real growth: production; use and income approaches. Output gap. Methods: growth accounting, leading indicators, sectoral value added. Potential output: Statistical and structural models. Saving-investment balance: compilation and interpretation. Industrial policy. Programming of real GDP: diagnostics, analysis, projection.

### *Inflation (2 hours)*

*Aggregates.* Consumption, consumer, household. Aggregate price level. Index number. Laspeyres (base-weighted) and Paasche (current-weighted) indices. Fixed base and chain indices. Consumer price indices. Indexation. Inflation and deflation. Real consumption and real income. CPI and inflation accounting. Expenditure weights. Inflation: core, weighted-median, expected, targeted, seasonal. CPI and (implicit) GDP deflator: composition and consistency check.

*Data.* BLS, WEO, World Bank, PGI, OECD, national statistical agencies.

*Analytics.* Construction of elementary price indices. Measuring inflation. Inflation forecasting. Cost-pulled inflation: world prices, exchange rate, wages, indirect taxes. Demand-pulled inflation: money supply, fiscal deficit, expectations, price regime, exchange rate regime. Pass-through effects. Inflation and interest rates. Inflation and unemployment. Inflation policy: targeting, containing. Inflation Programming of inflation: diagnostics, analysis, projection.

### *References*

#### *Main*

<http://www.imf.org/en/Data#RSSS>

SNA 2008, ch. 2D, 15C,D.

CPIM 2004, ch.1.1-1.34; 1.46-1.52; 2.1-2.43; 3.1-3.5; 3.91-3.96; 4.1-4.8; 9.1-9.24.

Cases 3 and 4.

#### *Additional*

Hoover 2011, parts II, V 9-10.

Rao - Nallari 2001, ch. 5.

### **Day 3. Public sector and fiscal policies**

#### ***Budget (2 hours)***

*Aggregates.* Public sector: general government, public corporations, social protection. Government. Economically significant price. Government unit: central, state, local. Public corporations. Budget: systems, year, transactions. Economic and functional classification. Budget accounting: accrual, due-for-payment, commitment, cash. Government operations: revenue, expense, operating balance, lending/borrowing. Revenue: taxes, social contributions, grants, other. Expense: compensation of employees, goods and services, consumption of fixed capital, interest, subsidies, grants. Financing: domestic, external. *Data.* CBO, IFS, OECD, national ministries of finance.

*Analytics.* Revenue: compulsory transfers, property income, voluntary transfers. Expenses: current, capital. Fiscal deficit/surplus. Fiscal balances: operating balance, lending/borrowing, cash surplus/deficit, primary, basic, structural, primary basic, operating. Fiscal burden. Fiscal space. Government saving and investment. Revenue forecasting: tax and nontax. Tax revenue: elasticity and buoyancy. Fiscal policy: tax level and rates, expense level, consumption vs. investment, counter-cyclical and pro-cyclical. Fiscal policy rules. Deficit: sustainability, crowding out. Expense forecasting: discretionary and nondiscretionary. Automatic stabilizers. Fiscal policies: fixed and flexible e-rate, no and full capital mobility. Optimal mix of fiscal, monetary, capital policies. Fiscal programming: diagnostics, analysis, projection.

#### ***Debt (2 hours)***

*Aggregates.* Definition of debt. Debt dichotomies: external-domestic, public –private, short-term-long-term, guaranteed-nonguaranteed, concessional-nonconcessional. Debt: stock, service, principal, interest, arrears, maturity, grace period, instruments, position, operations. Nominal and present value. Debt composition: country, currency, interest rate. Debt instruments: money market, bond, loans, currency and deposits, trade credits. Debt reorganization: rescheduling, forgiveness, conversion, reduction, restructuring, buyback. *Data.* JEDH, BIS, OECD, IMF, World Bank. National statistical agencies.

*Analytics.* Risks: solvency, liquidity, sustainability, vulnerability. Debt ratios and dynamics. Contribution: debt stock, interest rate, exchange rate, primary fiscal balance, other flows, stock-flow adjustment. Debt valuation: PV, NPV, CIRR. CPIA. Thresholds. Debt sustainability: external and public. Baseline and sensitivity: alternative scenarios and stress-tests. Debt programming: diagnostics, analysis, projection.

#### ***References***

##### *Main*

<http://www.imf.org/en/Data#GovFin>  
GFSM (2014), ch. 2- 4, App. 2, 4.  
Cases 5 and 6

##### *Additional*

Hoover (2011), ch.13, 17.  
Montiel (2009), ch. 10-12.  
Rao - Nallari (2001), ch. 8.

## Day 4. Monetary sector and monetary policies

### *Liquidity (2 hours)*

*Aggregates.* Financial corporations: central bank, commercial banks, insurance corporations, pension funds, other depository corporations. Financial assets. Liquidity: legal tender, fixed value, transferability, divisibility, maturity, yield. Broad money: currency, transferrable deposits. Counterparts: NDA, NFA, OIN. Money: holders and issuers. Monetary authorities: definition, functions, balance sheet. Reserve money. Commercial banks: definition, functions, balance sheet. Monetary survey: compilation, components, interpretation. Factors affecting liquidity. Money multiplier. Financial markets. Financial instruments: bonds, equity, derivatives. Risks. Interest rates: real and nominal, term structure.

*Data.* BIS, IFS, national central banks, FED, PGI.

*Analytics.* Money demand: money velocity approach, model-based approach. Money supply: rules and factors. Factors affecting reserve money and multiplier. Central bank's control over reserve money: autonomous liquidity supply, policy liquidity supply. Required and excess reserves. Structural liquidity deficit. Analytical ratios: currency/deposit, reserve/deposit, time deposit/demand deposit, required reserves/demand deposits, excess reserve/demand deposits. Forecasting: central bank balance sheet, monetary survey, and interest rates. Monetary programming: diagnostics, analysis, projection.

### *Monetary policy instruments (2 hours)*

*Aggregates.* Policy interest rates. Nominal and real interest rates. Monetary policy instruments: open market operations (reverse and outright transactions, debt certificates, swaps, deposits), standing facilities (marginal lending, deposit facility), reserve requirements (determination, minimum reserve, holding period). Reverse operations: main refinancing, long-term, fine-tuning, structural. Eligible assets, counterparties, collateral, procedures (tender, bilateral, end-of-day). Financial markets: money market, debt market, equity market.

*Data.* National central banks, ECB, FED, BIS, IMF. Nominal anchors.

*Analytics.* Monetary policy targets: immediate, intermediate, final. Price stability: definition, indicators, time-span. Transmission channels: interest rate, credit, exchange rate, expectations. Liquidity projections. Control of broad money: role of the CB, government, banks, depositors. Domestic credit: to the government, public enterprises, private sector. The crowding out effect. Monetary policy under fixed and flexible e-rate. Monetary and fiscal policies: optimal mix. Monetary sector programming: diagnostics, analysis, projection.

### *References*

#### *Main*

<http://www.imf.org/en/Data#MonStat>  
MFSM 2000, ch. III 82-105, IV, VI, VII.  
Cases 7 and 8

#### *Additional*

Hoover 2011, ch. 6-7, 16.  
Montiel 2009, ch. 10-12.  
Rao - Nallari 2001, ch. 7.

## Day 5. External sector and exchange rate policy

### *Balance of payments (2 hours)*

*Aggregates.* Balance of payments and international investment position. BoP accounts: current, capital, financial. Current account: trade balance, primary income, secondary income. Financial account: foreign direct investment, portfolio investment, other. Reserves: monetary gold, SDR, reserve position IMF, currency and deposits, securities, claims. Control, availability for use, pooled reserves. BoP presentation: standard, analytic, sectoral, monetary. Exceptional financing.

*Data.* IMF, OECD, BEA, national central banks

*Analytcs.* External stability. Assumptions: world prices, мировые цены, interest rates, exchange rate, external demand. Functions: export supply and import. Elasticities: price, exchange rates. Trade: value, volume, prices. Financial account: forecasting FDI and portfolio investments. Reserve: adequacy (levels, currency composition, maturity) and management. BoP adjustment. Capital mobility policies: restrictive, liberal. Balance of payments programming: diagnostics, analysis, projection.

### *Exchange rates (2 hours)*

*Aggregates.* Foreign exchange: sources of supply of and demand for foreign exchange. Exchange rate regimes: Fixed, currency board, conventional peg, stabilized, crawling peg, crawling-like, pegged with a band, floating, free-floating. Exchange rate: nominal, real, NEER, REER. Fixed rates: devaluation and revaluation. Floating rates: depreciation and appreciation. Overvalued and undervalued exchange rate. Selection of exchange rate regime. Devaluation effects. Pass-through effects.

*Data.* IMF, FED, national central banks.

*Analytcs.* Exchange rate level: consistency with external and internal balances. Fundamental determinants of the exchange rate level. The current account norm: permanent and temporary factors. Exchange rate assessment methods. Methods: external sustainability, macroeconomic balance approach: equilibrium REER, purchasing power parity (PPP), permanent income hypothesis (PIH). Exchange rate policies: active, passive. Exchange rate programming: diagnostics, analysis, projection.

### *References*

#### *Main*

<http://www.imf.org/en/Data#ESS>  
BPM6 (2010), ch. 2, 6, App 1.  
IMF (2017), ch.I-V.  
Cases 9 and 10

#### *Additional*

Hoover (2011), ch.8  
Montiel (2009), ch. 13-15.  
Rao - Nallari (2001), ch. 9.

### III. REFERENCES

The descriptive part of the course (aggregates and data) relies mainly on internationally accepted standards and codes available for free downloads at <http://www.imf.org/external/data.htm#guide>. The analytical part of the course draws on the author's experience in macroeconomic programming and will be available in the form of PowerPoint slides and hands-on exercises.

1. Kireyev A. (2014). *International Macroeconomics*. M., International Relations Publishers.
2. Kireyev A. (2013). *International Microeconomics*. M., International Relations Publishers.
3. Kireyev A. (2006). *Applied Macroeconomics*. M.: International Relations Publishers.
4. Kireyev A. (2003). *International Economics*. Part II. M., Free download at [www.alleng.ru/d/econ/econ131.htm](http://www.alleng.ru/d/econ/econ131.htm); [www.elobook.com/meo](http://www.elobook.com/meo); [www.twirpx.com/file/54526](http://www.twirpx.com/file/54526)
5. Kireyev A. (2006). Computer supplement to *Applied Macroeconomics*. M.
6. Montiel P. (2009). *International Macroeconomics*. NY: Wiley-Blackwell.
7. Hoover K. (2011). *Applied Intermediate Macroeconomics*. Cambridge: University press.
8. Rao M. and R. Nallari (2001), *Macroeconomic Stabilization and Adjustment*. Oxford: University press.
9. *External Balance Assessment (EBA): Technical Background of the Pilot Methodology* (IMF, 2017). <http://www.imf.org/external/np/res/eba/data.htm>
10. *System of National Accounts (SNA,2008)*. 2008 <http://unstats.un.org/unsd/nationalaccount/sna2008.asp>
11. *Consumer Price Index Manual: Theory and Practice* (CPIM, 2004). <http://unstats.un.org/unsd/EconStatKB/KnowledgebaseArticle10130.aspx>
12. *Government Finance Statistics Manual* (GFSM, 2014). <http://www.imf.org/external/Pubs/FT/GFS/Manual/2014/gfsfinal.pdf>
13. *Monetary and Financial Statistics Manual* (MFS, 2000). <http://www.imf.org/external/pubs/ft/mfs/manual>
14. *Balance of Payments and International Investment Position Manual* (BoP, 2010). Sixth Edition of the IMF's, Updated in 2013 (BPM6) <http://www.imf.org/external/pubs/ft/bop/2007/bopman6.htm>

#### ***Examples of country reports***

IMF: Country information <http://www.imf.org/external/country>  
 Morgan Stanley: Global Economic Forum <http://www.morganstanley.com>  
 McKinsey: Global Institute <http://www.mckinsey.com/mgi>  
 Economist Intelligence Unit: country reports <http://www.eiu.com>  
 Standard & Poor's: Global Credit Portal <https://www.globalcreditportal.com>



#### IV. INSTRUCTOR

Professor Alexei Kireyev

*Education:*

PhD (Doctor of economics), Moscow State Institute of International Relations (1989)

MA, Economics, George Washington University, USA (1999)

*Experience*

1993-current: Senior economist, IMF (Washington DC)

2000-03 IMF Representative to the WTO (Geneva)

1991-93 Economist, World Bank (Moscow)

1992-93 Consultant, Russell Investments (Seattle)

1989-1991 Senior Economic Advisor, Presidency (Moscow)

1984-89 Professor of Economics (Moscow, Seattle)

*Publications :*

Twelve books and over 100 articles.

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