Written Exam for the M.Sc. in Economics winter 2014-15

Advanced development economics: Applied macroeconomic and policy analysis

Master's Course

08 January 2015

(3-hour closed book exam)

Please note that the language used in your exam paper must correspond to the language of the title for which you registered during exam registration. I.e. if you registered for the English title of the course, you must write your exam paper in English. Likewise, if you registered for the Danish title of the course or if you registered for the English title which was followed by "eksamen på dansk" in brackets, you must write your exam paper in Danish.

This exam question consists of 7 pages in total (including this cover page).

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INSTRUCTIONS

- All questions (and associated sub-components) must be answered, in English.
- Each of the three questions makes the same contribution to the total grade.
- Percentages in square brackets after each question sub-component give the *approximate* weight of that sub-component within each question – e.g., 1(a) carries an approximate weight of 20% in question 1, or 0.2/3 = 6.67% overall.
- Remember to manage your time (3 hours).

Question 1

Read the material in Appendix A, which considers the impact of International Monetary Fund [hereafter, IMF] programs in developing countries. Making reference to this material (where appropriate), answer the following questions:

1(a) Describe, in general terms, the typical objectives of IMF stabilization programs.

[20%]

1(b) Outline the research question addressed by the author (in Appendix A) and the empirical strategy adopted.

[25%]

1(c) In light of your answer to question 1(b), interpret the main findings from the analysis reported in Appendix A Table A1.

[25%]

1(d) Based on your knowledge of other literature on the impact of IMF and World Bank programs, evaluate the strengths and weaknesses of the empirical strategy pursued by the author in Appendix A.

[30%]

Question 2

Consider the material in Appendix B, which is taken directly from Rao et al. (1999). Table B1 is a macroeconomic consistency matrix for India (1999-1998). Column and row 10 of Table B2 is a sub-total of the capital account entries.

For reference purposes, Table B2 is a general macroeconomic Social Accounting Matrix on the same form as Table B1. Note that *G*, *P* and *E* refer to the government, the private sector and the external sectors respectively; a "δ" preceding any variable denotes a one period change.

Answer the following questions:

2(a) Calculate the values of the following national accounting entities from Table B1:
-- (2a1) GDP at market prices;
-- (2a2) the trade balance as a share of GDP; and
-- (2a3) the change in foreign exchange reserves in months of imports.

[20%]

2(b) Using the notation in Table B2, formally define the *intra*-temporal government budget constraint.

[20%]

2(c) What were the main sources of financing of the government's budget deficit in India 1997-98?

[20%]

2(d) Discuss both the validity and potential policy applications of macroeconomic consistency matrices (Social Accounting Matrices) in low income settings.

[40%]

Question 3

Consider the following scenario: You work as a country analyst for an investment bank covering Zimbabwe. Zimbabwe is facing a large current account deficit, which was equal to 30% of GDP in 2013. The real effective exchange rate (REER) index for the same period was 85 (relative to a base year of 2005=100). You have been asked to estimate the equilibrium REER that is consistent with a medium-term current account balance target of zero (percent of GDP).

Answer the following questions:

(3a) Define the bilateral real exchange rate (RER) and show how this captures aspects of internal and external balance.

[25%]

(3b) Assuming that you have access to estimates of export and import elasticities for Zimbabwe (i.e., the elasticity of export supply and import demand to changes in the REER), explain how one can use these elasticities to calculate the required magnitude of adjustment of the real exchange to achieve a current account target (norm) of zero.

[25%]

(3c) Give possible reasons why policy-makers in Zimbabwe may not wish to pursue a strategy of real exchange rate devaluation, despite facing a current account deficit.

[25%]

(3d) Building on your previous answers, discuss the potential benefits and risks (for developing countries) of employing a fixed exchange rate or currency peg. Make reference to the experience of specific countries / examples in your answer.

[25%]

Appendix A: Material for Question 1

The following is an edited excerpt taken from Evrensel (2002), 'Effectiveness of IMF-supported stabilization programs in developing countries', *Journal of International Money and Finance* 21: 565-587

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… The issue of moral hazard regarding IMF-supported programs implies the possibility that the governments of program countries may adopt unsustainable macroeconomic policies due to the availability of IMF credit. If stabilization programs created moral hazard, this would be inconsistent with the effectiveness of stabilization programs. Moreover, one would expect that inter-program periods [, defined as intervening periods between the conclusion of one Fund-supported program and the start of another,] would be associated with increasingly unsustainable macroeconomic policies as the number of programs a country receives increases. If a country has had IMF support before, the cost of macroeconomic policies that lead to the depletion of international reserves may be lower to the country.

… [T]here are only 42 countries for which two inter-program periods can be identified during the period 1971-1997. Table 1 shows the results of a temporal inter-program analysis. [This employs a set of *t*-tests to investigate the difference in means of the policy variables between the first and second inter-program periods]. … The results of the temporal inter-program analysis should be interpreted in a strict all-else-equal sense.

"

Table A1. Temporal inter-program analysis

Policy variables[a]	Second vs. first inter-program period		
	Difference	*t*-value	Change with respect to the earlier period[b]
Reserves	−0.0116	−2.7245	Smaller***
Domestic credit	0.1639	4.1875	Larger***
Inflation rate	0.1192	3.5838	Higher***
Budget deficit	0.0126	1.7148	Larger*
Net domestic borrowing	0.0449	2.5896	Larger**
Net foreign borrowing	0.0078	2.8405	Smaller***
Net domestic debt	0.1922	2.683	Larger***
Net foreign debt	0.2757	3.3762	Larger***

[a] Policy variables are expressed as percentage of GDP except for the inflation rate.
[b] *, **, *** denote 10, 5, and 1% level of significance, respectively.

Appendix B: Material for Question 2

Table B1. SAM for India (1997-98)

Sources (Across) and Uses (Down)	Current Account of					Capital Account of					
	(C1) National Accounts	(C2) Government Sector	(C3) Private Sector	(C4) External Sector	(C5) Monetary Sector	(C6) Government Sector	(C7) Private Sector	(C8) External Sector	(C9) Monetary Sector	(C10) Total Investment	Total
National Accounts (R1)		C_g = 225491	C_p = 866975	X = 163711		I_g = 128467	I_p = 246873			I = 375340	1631517
Government sector (R2)	Ymp_g = 283818		Td = 69931	NTR_{eg} = 1305							355054
Private sector (R3)	Yfc_p = 1128693	Np_{gp} = 111292		NER_{ep} = 42639							1282624
External sector (R4)	Z = 219006	INV_{ge} = 2358	INV_{pe} = 10846								232210
Monetary sector (R5)											
Savings and borrowing of:											
Government sector (R6)		S_g = 15913					δB = 67201	$δF_g$ = 3353	$δDC_g$ = 42000		128467
Private sector (R7)			S_p = 334872					$δF_p$ = 37856	$δDC_p$ = 55882		428610
External sector (R8)				CAD = 24555					δR* = 16654		41209
Monetary sector (R9)							δM = 114536				114536
Total savings (sum of previous 4 rows (R10)		S_g = 15913	S_p = 334872	CAD = 24555							375340
Total	1631517	355054	1282624	232210		128467	428610	41209	114536	375340	

Table B2. Generic Social Accounting Matrix (consistency matrix) [table excludes row & column totals]

Sources (Across) and Uses (Down)	Current Account of:					Capital Account of:				
	(C1) National Accounts	(C2) Government Sector	(C3) Private Sector	(C4) External Sector	(C5) Monetary Sector	(C6) Government Sector	(C7) Private Sector	(C8) External Sector	(C9) Monetary Sector	(C10) Total Investment
National Accounts (R1)		Government Consumption (Cg)	Private Consumption (Cp)	Exports of goods and services (X)		Gross Govt. Investment (Ig) or (δKg)	Gross Private Investment (Ip) or (δKp)			Total Investment (Gross) (I) or (δK)
Government Sector (R2)	Net Operating Surp of G plus Dep_g plus Indirect Taxes less Subs [OSg + Dg + (Ti-Sb)]		Direct Taxes (Td)	Net Transfers from E to G (NTReg)						
Private Sector (R3)	Wages plus Net Profit accruing to P plus Dep_p [(W + π) + Dp]	Net G transfers to P & Interest on Dom. Debt [NTRep + NFPep]		Net transfers and factors payments from E to P [NTRep + NFPep]						
External Sector (R4)	Imports of goods and services (Z)	Inv inc of E from G including interest payment (INVge)	Inv inc of E from P including interest payment (INVpe)							
Monetary Sector (R5)										
Savings and Borrowings of:										
Government Sector (R6)		Gross Government Savings (Sg)					Net change in G borrowings from P (δB)	Net change in Foreign borr-owings of G (δFg)	Change in Domestic Credit to G (δDCg)	
Private Sector (R7)			Gross Private Savings (Sp)					Net change in E borrowing of P (δFp)	Change in Dom Credit to P (δDCp)	
External Sector (R8)				E Savings or CAD of the Domestic Economy					Change in Foreign Exchange Reserves (δR*)	
Monetary Sector (R9)							Change in Broad Money plus other liabilities (δM)			
Total Savings (Sum of 4 Rows) (R10)		Gross Government Savings (Sg)	Gross Private Savings (Sp)	Current Account Deficit (CAD)						