THE MONETARY APPROACH TO BALANCE OF PAYMENTS: A TAXONOMY WITH A COMPREHENSIVE REFERENCE TO THE LITERATURE

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ABSTRACT

This paper provides a taxonomy of the monetary approach to the balance of payments with a comprehensive reference guide to the literature. The paper very briefly reviews the three major alternative theories of balance of payments adjustments. These theories are the elasticities and absorption approaches (associated with Keynesian theory), and the monetary approach. The paper focuses on the monetary approach to balance of payments and points to the long-run and short-run lines of research within the monetary approach to balance of payments. Throughout, the paper provides a comprehensive set of references corresponding to each point discussed. Together, these references exhaust the existing literature on the monetary approach to balance of payments.

INTRODUCTION

This paper provides a taxonomy of the monetary approach to the balance of payments with a comprehensive reference guide to the literature. The paper very briefly reviews the three major alternative theories of balance of payments adjustments. These theories are the elasticities and absorption approaches (associated with Keynesian theory), and the monetary approach. The paper focuses on the monetary approach to balance of payments and points to the long-run and short-run lines of research within the monetary approach to balance of payments, as reviewed by Author (2003a and 2003b). Throughout, the paper provides a comprehensive set of references corresponding to each point discussed. Together

with references in Author (2003a and 2003b), these references exhaust the existing literature on the monetary approach to balance of payments.

This study is organized in the following way: Section II very briefly reviews three alternative theories of balance of payments adjustments. Then, with its focus on the monetary approach to balance of payments, the section divides the research into long run and short run. Section III concludes the paper.

DIFFERENT APPROACHES TO THE BALANCE OF PAYMENT ANALYSIS

Three alternative theories of balance of payments adjustment are reviewed in this section.¹ They are commonly known as the elasticities, absorption, and monetary approaches.²

The Elasticities Approach

The elasticities approach applies the Marshallian analysis of elasticities of supply and demand for individual commodities to the analysis of exports and imports as a whole. It is mainly concerned with the balance of trade:

Х	=	value of exports	
IM	=	value of imports	
ΒT	=	balance of trade	
ΒT	=	X – IM	(1)

It is generally assumed that exports depend on the price of exports, and imports depend on the price of imports. These relations are then translated into elasticities, by differentiating the above equation with respect to the exchange rate. A criterion for a change of the balance of trade in the desired direction can be established, assuming that export and import prices adjust to equate the demand for and supply of exports and imports.

The Absorption Approach

The absorption approach seeks to look at the balance of trade from the point of view of national income accounting:

Y	=	domestic production of goods and service	es
Е	=	domestic absorption of goods and services,	
		or domestic total expenditure	
BT	=	balance of trade	
BT	=	Y – E	(2)

The above identity is useful in pointing out that an improvement in the balance of trade calls for an increase in production relative to absorption.

The Monetary Approach

The monetary approach³ looks at the balance of payments as the change in the monetary base⁴ less the change in the domestic component:

Η	=	change in the quantity of money der	nanded
D	=	domestic credit creation	
BP	=	DH - DD	(3)

where the "italic D," i.e., *D*, appearing in front of a variable designates the "change" in that variable. That is, *D* is the first difference operator: $DX = X_{(t)} - X_{(t-1)}$.

The monetary approach assumes⁵ that the domestic assets component of the monetary base is unaffected⁶ by balance of payments flows⁷. The monetary approach assumes full-employment and an integrated world markets⁸.

The concentration on the absolute, rather than relative, price level is a notable point of departure from the Humean monetary approach that long preceded Keynes. In Hume, the domestic price level can vary from purchasing power parity due to stock disequilibrium in the domestic money market⁹. Such a variation in relative price levels gives rise to changes in trade flows which affect the balance of payments, and hence the domestic money stock in the long run. The monetary approach, on the other hand, often relies on the excess demand for money to directly affect the overall balance rather than via a change in relative price levels. It should be pointed out that both the Humean adjustment process and the monetary approach have the same implications with respect to the price level in the long run.

A Foundational Comparison of the Three Approaches

The preceding pages present a brief review of the three major approaches to the balance of payments – elasticities, absorption, and monetary. Ignoring capital flows the three views can be summarized with the following equations:

Y	=	real income		
DH	=	change in the quantity of money demanded		
DD	=	domestic credit creation		
BT	=	X - IM	(Elasticities)	(4)
BT	=	Y - E	(Absorption)	(5)
BT	=	DH - DD	(Monetary)	(6)

where, as before, the "italic D," i.e., *D*, appearing in front of a variable designates the "change" in that variable. That is, *D* is the first difference operator: $DX = X_{(t)} - X_{(t-1)}$.

Mundell (1986c) cautions that the three approaches are all correct and assert identical propositions, even if capital movements are included when all variables are defined as ex-post, realized entities. This can be shown by the following three equations:

DR	=	increase in international reserves	
DK	=	net capital outflow	
Y	=	E + BT	(7)
DH	=	DD + DR	(8)
DR	=	BT - DK	(9)

From national income accounting, we have equation (7); from banking accounts equation (8) follows; balance of payments accounts give us equation (9). The ex-post identity of the three approaches is seen when we note that:

$$DR = BT - DK = Y - E - DK = DH - DD$$
(10)

Though it is true that an improvement in the balance of payments must imply an increase in Y-E-DK, an increase in *D*R, an increase in *D*H–*D*D provides additional checks on the logic of balance of payment policies, it should be remembered that the assumptions behind the three approaches differ widely. So do

their views¹⁰ of the process of adjustment in the balance of payments¹¹. Differences in the approaches become apparent when we conceive of the categories as ex-ante – that is, as representative of intentions¹².

Research on the Monetary Approach to Balance of Payments

Research on the monetary approach to the balance of payments can be divided into two different approaches; one focuses on the long-run equilibrium, the other considers the adjustment mechanism and the channels through which equilibrium is reached. The first approach is based on the reserve flow equation developed by H. G. Johnson (1972). Testing was undertaken by J.R. Zecher (1974) and others¹³. The second approach is based on theoretical work of S.J. Prais (1961), with corresponding empirical work undertaken by R. R. Rhomberg (1977) and others¹⁴.

CONCLUSION

This paper very briefly reviewed three alternative theories of balance of payments adjustments. These theories were the elasticities and absorption approaches (associated with Keynesian theory), and the monetary approach. The paper focused on the monetary approach to balance of payments, pointed to the long-run and short-run lines of research within the monetary approach to balance of payments, and listed a comprehensive set of references corresponding to each line of research. Accordingly, the reference section together with referenced cited in Author (2003a and 2003b) exhausted the literature on the monetary approach to balance of payments.

APPENDIX 1

This is a comprehensive list of references in the context of the monetary approach to balance of payments which have discussed the other approaches to balance of payments.

Blejer, Khan, and Masson (1995), Dombrecht (1978), Frenkel and Johnson (1976b), Harberger (1950), Helliwell (1978), Hossain (1988), Jager (1978), Johnson (1958, 1972, 1973b, 1976a, 1977a, 1977b, 1977c), Jonson and Kierzkowski (1975), Kenneally and Finn

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(1985), Meller (1987), Pearce (1961), Rhomberg and Heller (1977), Shone (1980), Tsanacas, Kasibhatla, and Malindretos (2000), Tullio (1981a), and Whitman (1975).

APPENDIX 2

This is a comprehensive list of references regarding the modern revival, theoretical foundation, further development, and review articles related to the theory, assumptions, features, and empirical work on the monetary approach to balance of payments.

Modern Revival by:

Collery (1971a), Hahn (1959), Harberger (1950), Kemp, M.C. (1962, 1970), Komiya (1966, 1969), McKinnon (1968), McKinnon and Oates (1966), Meade (1951), Mundell (1968a, 1971a), Negishi (1972), Pearce (1961), Polak (1957), Polak and Argy (1971), and Prais (1961).

Theoretical Foundation:

Dornbusch (1973a), Johnson (1958, 1972, 1973a), and Mundell (1968a, 1971a).

Further Developed by:

Frenkel (1975), Frenkel and Johnson (1976a, 1976b), Frenkel and Rodriguez (1975), Humphrey and Keleher (1982a), International Monetary Fund (1977), Johnson (1976a, 1977b), Johnson and Nobay (1974), Kemp, D.S. (1975), Mussa (1974, 1976), Putnam and Wilford (1978), and Swoboda (1973, 1976).

Review Articles:

Kreinin and Officer (1978), Magee (1976), and Whitman (1975).

Further Review Article:

Arize, Grivoyannis, Kallianiotis, and Malindretos (2000), Blejer, Khan, and Masson (1995), Connolly (1986), Dombrecht (1978), Finn (1982), Grubel (1976), Hahn (1977), Helliwell (1978), Horne (1983), Hossain (1988), Johnson (1973b, 1975, 1977b), Mussa (1974, 1976), Rabin and Yeager (1982), Rhomberg and Heller (1977), and Tsiang (1977).

Review Assumptions and Features:

Akhtar (1986), Blejer (1983), Branson (1975a, 1975b), Connolly (1986), Frenkel and Johnson (1976b), Frenkel and Rodriguez (1975), Grubel (1976), Haberler (1976), Hahn (1977), Humphrey (1986a, 1986b), Humphrey and Keleher (1982b), Johnson (1958, 1962b, 1972, 1973b, 1975, 1976a, 1976b, 1977a, 1977b, 1977c), Kasibhatla and Malindretos (1993), Kemp, D.S. (1975), Kenneally and Finn (1985), Manouchehi (1988), Metzler (1976), Mussa (1974, 1976), Putnam (1976), Rohmberg and Heller (1977), Swoboda (1976), Tsanacas,

Kasibhatla, and Malindretos (2000), Tullio (1981b), Wilford, D.S. (1977a), and Wilford, W.T. (1986).

Review of Empirical Work:

Arize, Grivoyannis, Kallianiotis, and Malindretos (2000), Kreinin and Officer (1978), Magee (1976), Malindretos (1988), and Whitman (1975).

APPENDIX 3

This is a comprehensive list of references in the context of the monetary approach to balance of payments which discuss or incorporate the real-balance effect.

Agenor (1990), Aghevli (1975), Aghevli and Khan (1980), Aghevli and Sassanpour (1982), Archibald and Lipsey (1958), Argy (1970), Baker and Falero (1971), Bergstrom and Wymer (1976), Bilquees (1989), Black (1975), Blejer (1977, 1983), Blejer and Fernandez (1978, 1980), Blejer and Leiderman (1981), Bonitsis and Malindretos (2000), Bourne (1989), Brissimis and Leventakis (1984), Coghlan (1981), Collery (1971a, 1971b), Connolly and Taylor (1976), Courchene (1973), Currie (1976), De Silva (1977), Dornbusch (1971, 1973a, 1973b), Dornbusch and Mussa (1975), Frenkel (1976a, 1976b), Frenkel and Johnson (1976b), Frenkel and Rodriguez (1975), Friedman (1970), Girton and Roper (1977), Guitian (1973, 1976), Gupta (1984), Helliwell (1978), Henderson (1977), Horne (1979), Humphrey (1986a, 1986b), Humphrey and Keleher (1982b), Jimoh (1990), Johnson (1958, 1972, 1975, 1976a), Jonson (1975, 1976), Jonson and Kierzkowski (1975), Jonson, Moses, and Wymer (1977), Kasibhatla and Malindretos (1993), Kasibhatla, Malindretos, and Kutasovic (2000), Keleher (1986), Kemp, D.S. (1975), Khan (1974, 1976, 1977), Khan and Knight (1981), Kieran (1970), Kim (1983), Knight and Mathieson (1983), Knight and Wymer (1976, 1978), Knoester and Van Sinderen (1985), Kouri (1976), Kreinin and Officer (1978), Laidler and O'Shea (1980), Leon and Molana (1987), Leventakis (1984), Levy (1981), Miller (1980), Mundell (1968b, 1971b), Parkin (1974a), Patinkin (1965), Polak (1957), Porter (1974), Prais (1961), Purviz (1972), Reid (1973), Rhomberg (1977), Rodriguez (1976), Sassanpour and Sheen (1984), Schotta (1966), Spencer (1974), Spinelli (1979, 1983), Swoboda (1976), Taylor (1987b), Tsanacas, Kasibhatla, and Malindretos (2000), Tsiang (1977), Tullio (1981a, 1981b), Vaez-Zadeh (1989), Wein (1974), Whitman (1975), Wilford (1977a), and Yusoff (1988).

APPENDIX 4

This is a comprehensive list of references related to discussions of criticisms of the monetary approach to balance of payments.

Akhtar (1986), Arize, Grivoyannis, Kallianiotis, and Malindretos (2000), Bilquees (1989), Borts and Hanson (1977), Branson (1975a), Currie (1976, 1977), Darby (1980a), De Grauwe (1975, 1976), Fontana (1998), Fratiani (1977), Frenkel, Gylfason, and Helliwell (1980), Hacche and Townend (1981), Hahn (1977), Hodjera (1976), Horne (1983), Hossain (1988), Johnson (1972, 1977a, 1977c), Jonson (1976), Kamas (1985), Karacaoglu (1980), Kenneally and Finn (1985), Kouri and Porter (1974), Kreinin and Officer (1978), Laskar (1982), Lee and Wohar (1991), Leon (1988), Looney (1991), Magee (1976), McNown and Wallace (1977), Miller (1980), Nobay and Johnson (1977), Obstfeld (1982), Petoussis (1985), Putnam and Wilford (1977), Rabin and Yeager (1982), Rasulo and Wilford (1980), Salop (1976), Scheetz (1986a, 1986b), Sheehey (1980), Sohrab-Uddin (1985), Spanos and Taylor (1984), Swoboda (1976), Taylor (1987a, 1987b), Tsiang (1977), Tullio (1981c), Watson (1988, 1990), Whitman (1975), and Wohar and Burkett (1989).

APPENDIX 5

This is a comprehensive list of references in the general context of the monetary approach to balance of payments which discuss sterilization.

Addison, Demery, and Page (1993), Bloomfield (1959), Boyer (1979), Cooper (1969), Courchene (1973), Darby (1980b), Feige and Johannes (1981), Frenkel, Gylfason, and Helliwell (1980), Frenkel and Johnson (1976b), Frenkel and Rodriguez (1975), Galliott (1973), Helliwell (1978), Horne (1979), Humphrey (1986a), Johnson (1972), Kim (1983), Knight and Wymer (1976, 1978), Lee (1985), Magee (1976), Michaely (1970), Miller (1980), Mundell (1968a), Mussa (1974, 1976), Roper (1971), Schotta (1966), Swoboda (1973, 1976), Whitman (1975), Wilford, W.T. (1986), and Willms (1971).

APPENDIX 6

This is a comprehensive list of references which discuss the weak and strong forms of the monetary approach to balance of payments.

Hodgson and Schneck (1981), Kenneally and Nhan (1986), Lee and Wohar (1991), and Rabin and Yeager (1982).

APPENDIX 7

This is a comprehensive list of references to the Humean origin of the monetary approach to balance of payments.

Berdell (1995), Cesarano (1998), Connolly (1986), Courchene (1973), Dombrecht (1978), Fausten (1979), Hume (1752), Johnson (1973b, 1976a, 1977b, 1977c), Kasibhatla and Malindretos (1993), Keleher (1986), Kenneally and Finn (1985), Kreinin and Officer (1978), McCloskey and Zecher (1976), Putnam and Wilford (1986a), Rhomberg and Heller (1977), and Wilford (1977a).

APPENDIX 8

This is a comprehensive list of references in the context of the monetary approach to balance of payments which discuss the compatibility of the monetary approach with other approaches to the balance of payments.

Akhtar (1986), Blejer (1983), Dornbusch (1973a, 1973b), Frenkel, Gylfason, and Helliwell (1980), Hossain (1988), Jager (1978), Johnson (1972, 1976a), Jonson and Kierzkowski (1975), Kenneally and Finn (1985), Khan (1976), Kreinin and Officer (1978), Laidler (1981), Montiel (1984, 1985), Mussa (1974, 1976), Petoussis (1985), Rhomberg (1964), Rodriguez (1976), Sassanpour and Sheen (1984), Swoboda (1976), and Wilford (1986).

APPENDIX 9

This is a comprehensive list of references in the context of the monetary approach to balance of payments which discuss the historical background of the monetary approach.

Fausten and Victoria (1980), Frenkel (1976b), Frenkel and Johnson (1976b), Humphrey (1986b), Keleher (1986), Myhrman (1976), and Spinelli (1988).

APPENDIX 10

This is a comprehensive list of references which discuss the Keynesian-monetarist controversy in the context of the monetary approach to balance of payments.

Arize, Grivoyannis, Kallianiotis, and Malindretos (2000), Beladi, Biswas, and Tribedy (1986), Bonitsis, Kasibhatla, and Malindretos (1995), Bonitsis and Malindretos (2000), Dornbusch (1971), Fontana (1998), Frenkel, Gylfason, and Helliwell (1980), Grubel (1976), Horne (1983), Johnson, Kasibhatla, and Malindretos (2000), Kamas (1986), Kasibhatla, Malindretos, and Kutasovic (2000), Malindretos (1984, 1988, 1991), Miller (1978), Rivera-Solis, Kasibhatla, and Malindretos (2000), Spencer (1974), and Whitman (1975).

ENDNOTES

- 1 For a comprehensive list of references in the context of the monetary approach to balance of payments which have discussed the other approaches to balance of payments see Appendix 1.
- 2 In order to save space in this paper, the author decided not to report here the references which have already appeared in Author (2003a, 2003b).
- 3 For a comprehensive list of references regarding the modern revival, theoretical foundation, further development, and review articles related to the theory, assumptions, features, and empirical work on the monetary approach to balance of payments see Appendix 2.
- 4 For a comprehensive list of references in the context of the monetary approach to balance of payments which discuss or incorporate real-balance effect see Appendix 3.
- 5 For a comprehensive list of references related to discussions of criticisms of the monetary approach to balance of payments see Appendix 4.
- 6 This is the well-known "non-sterilization" assumption. The monetary approach considers the non-sterilization assumption to be realistic because of its view of the overall balance as a symptom of excess demand for money. Thus, a deficit indicates the presence of a negative excess demand. The deficit also removes the disequilibrium in the money market. Any attempt by the monetary authorities to make up for the decline in money supply is doomed to failure, since credit creation will only prolong the payments deficit.
- 7 For a comprehensive list of references in the general context of the monetary approach to balance of payments which discuss sterilization see Appendix 5.
- 8 For a comprehensive list of references which discuss the weak and strong forms of the monetary approach to balance of payments see Appendix 6.
- 9 For a comprehensive list of references to the Humean origin of the monetary approach to balance of payments see Appendix 7.
- 10 For a comprehensive list of references in the context of the monetary approach to balance of payments which discuss the compatibility of the monetary approach with other approaches to the balance of payments see Appendix 8.

- 11 For a comprehensive list of references in the context of the monetary approach to balance of payments which discuss the historical background of the monetary approach see Appendix 9.
- 12 For a comprehensive list of references which discuss the Keynesian-monetarist controversy in the context of the monetary approach to balance of payments see Appendix 10.
- 13 See Author (2003a) for a review of the long-run monetary approach to balance of payments.
- 14 See Author (2003b) for a review of the short-run monetary approach to balance of payments.

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