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Introduction

Restrictions that actually generate frictions in an economy have not been included in most General Equilibrium models with incomplete markets. However, in infinite horizon models, welfare gains can be generated if frictions are allowed. Binding constraints can be important in several aspects. Among others, it may allow for a positive fundamental value of money that creates room for wealth transfers across time and states of nature. Also, collateral requirements in an asymmetric information environment restrict the possibility of unbounded arbitrage opportunities.

Seminal papers by Santos & Woodford (1997) and Magill & Quinzii (1996) do include limits to economic agents indebtedness; however, such constraints never bind in equilibrium and never generate frictions in the economy. Some recent work by Santos (2006) and Gimenez (2006) include liquidity restrictions. Those take the form of a cash-in-advance constraint in the first paper, and a no short-sales constraint in the second. They show that, under these restrictions and some hypothesis over preferences, money has a positive value that is a true fundamental value if they are binding infinitely often.

This thesis aims to understand the importance of some type of frictions in general equilibrium models, and is divided in three chapters.

In the first chapter, we consider the widely studied case of an asset paying no dividends (that we will, with all the necessary disclaimers, call money) and in which the size of loans are bounded by an explicit debt constraint. We show that, under uniform impatience of preferences, assets in positive net supply are free of price bubbles for deflators that yield finite present values of wealth. This, however, does not imply that equilibrium prices must coincide with present values of dividends. In fact, if borrowing constraints are binding, asset prices must take into account the shadow prices associated with such constraints.

In such a context, we prove that a positive asset price occurs at some node if and only if debt constraints are either binding at this node or at some future state of nature. Thus, binding debt constraints always induce frictions which create room for improving welfare by allowing money to have a role in transferring wealth across the event tree. Also, we develop a duality theory of

individual optimization under infinite-horizon, necessary for the results here obtained.

In the second chapter, we discuss how restrictive is the uniform impatience hypothesis, a joint requirement on agent's preferences and endowments imposed in order to prove equilibrium existence, to the results. As already mentioned, this hypothesis, under Kuhn-Tucker multipliers, precludes the possibility of occurrence of speculative bubbles on assets in positive net supply. But it also can be too restrictive and precludes the possibility of time varying intertemporal discounting (e.g., hyperbolic discount functions). In this chapter, we characterize uniform impatience assumption in terms of asymptotic properties on intertemporal discount factors. As a consequence, we show that hyperbolic discounting is incompatible with uniform impatience of separable utility functions.

Chapter 2 suggests that models with default and collateral requirements – where uniform impatience assumptions are not necessary to prove the existence of equilibrium (as Araujo, Páscoa & Torres-Martínez (2002, 2007)) – may be more appropriate if hyperbolic discounting is expected.

Under this environment, we introduce, in the third chapter ¹, assets backed by physical collateral that extends the Cornet & de Boisdeffre (2002) model of asymmetric information. Originally, the authors propose a decentralized mechanism where agents anticipate asset prices and refine their signals by precluding arbitrage opportunities. This procedure extends the classical non-arbitrage asset pricing. However, there are financial structures for which only asset prices that fully reveal information are equilibria. Differently, we show that, if we allow for default and collateralized assets, equilibrium always exists, independently of the financial-informational structure.

¹This chapter is based on Petrassi & Torres-Martínez (2008).