Current induced dynamics in thin ferromagnets SHAFFIQUE ADAM, MIKHAIL L. POLIANSKI, PIET W. BROUWER, Laboratory of Atomic and Solid State Physics, Cornell University, Ithaca NY 14853 — Recent theoretical work by Polianski and Brouwer, Phys. Rev. Lett. 92, 026602 (2004), and experimental work by Oezyilmaz, Kent, Sun, Rooks, and Koch, Phys. Rev. Lett. 93, 176604 (2004) demonstrate that a sufficiently strong unpolarized electric current induces transverse spin-wave instabilities in thin, asymmetric ferromagnetic nanojunctions for only one polarity of the current. Here we present analytic and numerical calculations for the ferromagnet dynamics in the linear and non-linear regimes.