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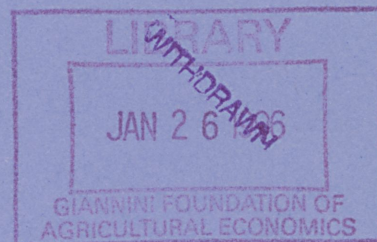
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Working Paper No. C96-060

Recent Exchange Rate Experience and Proposals for Reform

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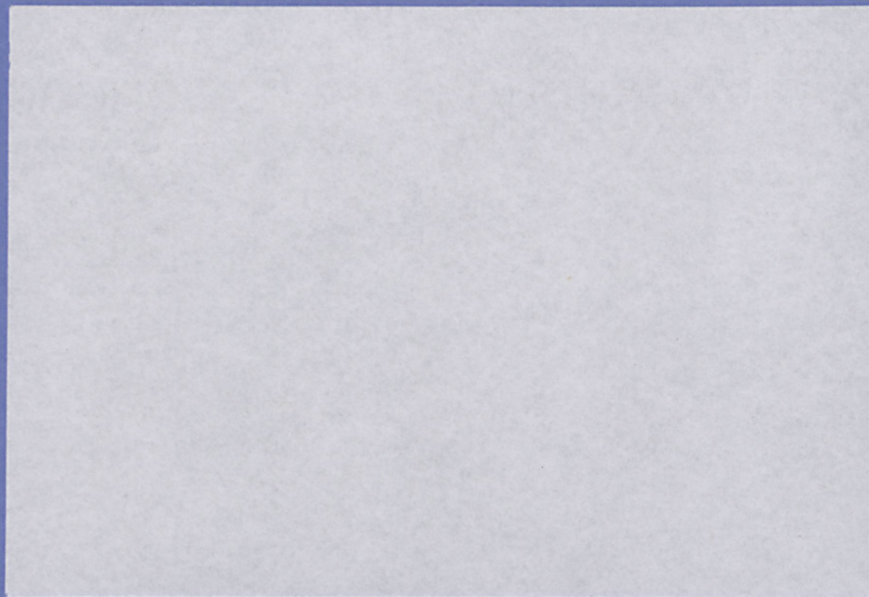
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Key words: exchange rate, foreign exchange market, volatility, speculation, bubble,
McKinnon, Tobin tax

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Abstract

The paper reviews the grounds for fears that foreign exchange markets are not behaving as well as they should: recent misalignments and crises, and seven sets of academic findings. (1) Exchange rate volatility is high, (2) with possible adverse effects. (3) Volatility cannot be explained by observable fundamentals, (4) and changes when the regime changes, even without a change in volatility of fundamentals. (5) Expectations appear to be biased. (6) Short-term expectations are destabilizing. And (7) the effect of changes in monetary policy on the exchange rate is drawn out over time, and is not instantaneous.

The paper then reviews proposals for radical reform. Some entail "irrevocably fixed" exchange rates, some capital controls, and some formal institutions for intervention in the foreign exchange market. The conclusion is that the present system, floating, managed with occasional intervention, for all its flaws, is probably better than the alternatives.

Some have concluded that the foreign exchange market is not working well. The conclusion is fed by recent developments in international financial markets, on the one hand, and by a number of academic findings on the other. We review the grounds for these concerns, and then review various proposals that have been made for improving the system.

1. Bubbles and Crises in the Foreign Exchange Market

In the 1970s, the majority view among economists was that floating exchange rates were the right way to avoid misalignments, such as the overvaluation to which the dollar had become increasingly subject in the 1960s. The market knows better than governments what is the true value of the currency. Most economists had become persuaded by the argument of Milton Friedman: that speculators would be stabilizing rather than destabilizing, because any who increased the magnitude of exchange rate fluctuations could only do so by buying high and selling low, which is a recipe for going out of business pretty quickly.

The pendulum began to swing back in the 1980s. The decade began with Mundell and a few supply-siders arguing for some version of a return to the gold standard. Concerns about floating rates became much more widespread with the dollar bubble in 1984-85. The market sometimes gets things wrong.

The notion that financial markets might suffer from excessive volatility has been boosted by the theory of rational speculative bubbles. The initial motivation for the

theory was purely as a mathematical curiosum. But it turned out to be a demonstration that speculators could be destabilizing without losing money. In a rational speculative bubble, the price goes up each period because traders expect it to go up further the next period. Even though the price becomes increasingly far removed from the value justified by economic fundamentals, each individual trader knows that he would lose money if he tried to buck the trend on his own. These rational speculative bubbles are an effective answer to Friedman's point that destabilizing speculators would lose money. A further reason that the pendulum swung partway from floating to fixed in the 1980s was the emergence of the nominal anchor argument. This is a prescription to peg exchange rates firmly as a credible pre-commitment on the part of the monetary authorities not to inflate. It became a popular argument for southern European countries joining the EMS, and for LDCs.

The disenchantment with pure floating has now given way to a renewed disenchantment with fixing. The reason: a number of disruptive crises that have occurred where countries had tried to fix their rates. It is true that many of these exchange rate crises are the result of governments trying to defend parities that are no longer justified by fundamentals. Examples are the crises that hit the pound and lira in 1992, and Mexico in 1994. These crises were largely the fault of the governments, not of the markets.

But unwarranted speculative attacks can happen under fixed rates or target zones too, e.g., the French franc in 1993. Judged by such macroeconomic fundamentals as inflation and interest rates, the franc was not overvalued against the mark, and yet was

forced by speculative attack to abandon its $2\frac{1}{4}\%$ margins. The theory has been supplied in so-called "second-generation" models of speculative attacks, featuring multiple equilibria.¹ These speculative attacks are the fixed-rate analog of the speculative bubbles that arise under floating rates.

2. The Academic Literature:

Why Do We Think Something May Be Wrong with the Foreign Exchange Market?

2.1. Is Exchange Rate Volatility Excessive?

Everyone describes floating exchange rates as highly volatile. But volatile compared to what? They are more volatile than they were expected to be before the 1973 move to floating rates, more volatile than the prices of goods and services, and more volatile than apparent monetary fundamentals. This is not the same, however, as saying that they are excessively volatile. Even if foreign exchange markets are functioning properly, fundamental economic determinants, such as monetary policy, should produce a lot of variability in the exchange rate. Dornbusch's famous "overshooting theory" of exchange rate determination, for example, predicts that a relatively small increase in the money supply will cause a relatively large increase in the price of foreign exchange. The important questions are whether volatility is higher than necessary, and what the harmful effects might be.

¹ E.g., Maurice Obstfeld (1995).

2.2 Evidence of adverse effects from short-term volatility

The concern about exchange rate volatility has always been possible adverse effects on trade and investment. They have been a major motivation behind attempts to link European currencies, via the ERM (European Exchange Rate Mechanism), and now via EMU (Economic and Monetary Union). Most empirical studies have concluded that the effect of short-term volatility on trade is small, if any. More importantly, the observed exchange rate variability could be inevitable real risk, which would pop up elsewhere if suppressed in the foreign exchange market. But, on this last point there is relevant evidence.

2.3 If volatility were suppressed in the foreign exchange market, would it show up elsewhere?

Econometric research has failed to explain most exchange rate movements by fundamentals, especially on a short-term basis.² Logically, this failure leaves two possible explanations: (1) unobservable fundamentals, or (2) bubbles, defined as exchange rate movements not based on fundamentals. In the first case, we would still be subject to the standard presumption of neoclassical economics that if volatility were somehow suppressed in the foreign exchange market, it would simply show up elsewhere. Imagine, for example, that the fundamental origin of the appreciation of the dollar in the first half

² Frankel and Rose (1995) survey the empirical literature on exchange rate determination.

of the 1980s were an increase in worldwide demand for U.S. goods, and therefore an increase in demand for U.S. currency to buy those goods (a real appreciation). An attempt on the part of the U.S. monetary authorities to suppress the appreciation would consist of purchases of foreign currencies, putting more dollars in the hands of the public. This increase in the U.S. money supply would have been inflationary. The increase in U.S. relative prices (the real appreciation) would have occurred anyway, but it would simply have taken the undesirable form of inflation. Can we judge that exchange rate movements are due to unobservable fundamentals, rather than bubbles?

2.4 Evidence from fixed vs. floating regimes

Arguing against the unobservable fundamentals explanation is the pattern whereby nominal and real exchange rate variability has increased whenever there is a shift from a fixed to a floating regime.³ Furthermore, there is no reduction in the variability of monetary fundamentals necessary to keep the exchange rate in line, when moving from floating rate regimes to fixed rate regimes. This seems to leave speculative bubbles as the remaining explanation for much of the short-term variation in exchange rates. It would likely follow that exchange rates are unnecessarily volatile.

2.5 Are forecasters biased and markets inefficient?

Another concern is the widely-documented apparent bias in the forward exchange

³ The example of Ireland is a particularly convincing demonstration, in Mussa (1990).

market. The forward discount actually points the wrong way as a predictor of the exchange rate.⁴ The bias is usually interpreted simply as an exchange risk premium, but there is some evidence against this view.⁵ It is possible that the bias is evidence of market inefficiency.

2.6 Is speculation destabilizing?

There is also apparent evidence in survey data of extrapolation on the part of market participants, in forecasts at short horizons of under three months. If traders act based on such extrapolative expectations, they will create bandwagons: an upward blip will generate expectations of future appreciation, leading to buy orders, and thereby contributing to the upward trend. This is evidence of destabilizing speculation. At longer horizons of three months to one year, however, forecasts seem to fit better the patterns of adaptive, regressive, or distributed lag expectations. All three mechanisms of expectations formation, if acted upon by traders, would lead to stabilizing speculation.

Which horizon dominates actual foreign currency trading? The horizon at which most trading takes place is actually shorter than one day. Traders at most banks take large positions for a few hours, but limit their overnight and weekend positions sharply, or close them out altogether. This does not in itself necessarily mean that the determination of the market price is dominated by short horizons. If traders are fully

⁴ Engel (1995) has recently surveyed the subject.

⁵ Chapters in Frankel (1993) document this point and the next.

rational, even though they trade at short horizons, their expectation of how much a currency will be worth one period from now will be tied down by their rational forecast of how much it will be worth one year from now. The question is whether this tying of the short-term to the long-term is in fact operative. The survey data results seem to suggest that short-term expectations are not in fact formed by looking far into the future. Given the high level of volatility, the rationally expected year-long return to fundamentals equilibrium is a very minor factor in the traders' calculation on each one-hour trade.

2.7 "Overshooting the overshooting equilibrium"

Finally, effects of exogenous changes in monetary policy are apparently not instantaneous, as they should be in theory, but rather are drawn out over time.⁶ This could be an example of how speculative bubbles get started.

The main problem with the theory of *rational* speculative bubbles is that it has nothing to say about what gets bubbles started. Under the theory the exchange rate is simply indeterminate. They also offer no particular grounds for thinking that such destabilizing speculation would disappear with government action. Episodes such as the 1984-85 dollar and 1994-95 yen may be better understood by models with small deviations from rational expectations. Some models have two classes of actors: short-horizon technical analysts or "noise traders" on the one hand, and the traditional

⁶ Eichenbaum and Evans (1995).

fundamentalists (whose expectations would be rational, were it not for the existence of the noise traders) on the other hand. The result can be a speculative bubble developing on the back of a movement that originated in fundamentals. I call this "overshooting the overshooting equilibrium." It is capable of explaining some of the other puzzling findings, such as the tendency, when the forward discount or interest differential points down, for the currency actually to move up in the future. In the aftermath of an increase in the interest rate differential, the currency appreciates over the subsequent year, rather than appreciating instantaneously and then depreciating gradually as it should in the efficient-markets overshooting theory.

3. Proposed Cures for the Foreign Exchange Market

Proposals to stabilize exchange rates can be grouped into three categories.

3.1 Fixed exchange rates: "irrevocably fixed" peg, or currency board (or gold standard).

Exchange rate pegs are looking less attractive than they did in the 1980s, when many small and medium-sized countries made a return to fixed exchange rates a cornerstone of monetary disinflation programs. It had been claimed that sincere commitment on the part of the monetary authorities was sufficient to end inflation. The 1992 ERM crisis and 1994 peso crisis have changed minds. In practice there is no such thing as irrevocably fixed. Even the French-speaking countries of West and Central

Africa devalued against the franc in 1994, for the first time in 35 years of independence.

It has become fashionable in some quarters to say that the solution is a more credible commitment to a fixed exchange rate, such as is offered by a currency board. This might make some sense, for certain countries. These are countries that (1) are very small, open, and well-integrated with the world economy, (2) crave further rapid integration with major neighbors, or (3) desperately need to import monetary stability, due to a history of hyperinflation or absence of stable institutions. To the list of requirements should be added possession of sufficiently large international reserves. Enough reserves for 100 % backing of central bank money might not be sufficient; enough to back the entire domestic money supply might be required, to deal with potential banking crises. To acquire such reserves can be a tall order. But in any case, currency boards and fixed exchange rates are not for most large countries.

3.2 Capital controls:

Tobin tax. A levy on all foreign exchange transactions was proposed by Tobin (1988). It may not be quite as crazy as most economists think. There are two standard critiques: (1) that there is no reason why the Tobin tax should screen out the undesirable destabilizing speculation without also screening out desirable investment, and (2) that it cannot be enforced. There is an answer to the first critique. The studies based on survey data, mentioned above, suggest that short-horizon speculators tend to extrapolate and long-horizon speculators tend to forecast a return to long-run equilibrium. A tax could

be small enough to be fairly negligible for importers, exporters, and long-term investors, and yet wipe out a lot of short-term speculation. A tax of 0.1 per cent, measured in terms of annualized expected rates of return, would come out to a 43 per cent penalty on one-day speculation. This would discourage short-term transactions, which are the ones that on average seem based on extrapolative forecasting, and therefore destabilizing.⁷

Thus the Tobin tax might have the effect of reducing unnecessary volatility, provided it could be enforced. (Also it would raise a lot of revenue. If governments used it to replace, say, tariff or income tax revenue, it would be hard to argue that overall allocation of resources was on net damaged.) But enforcement is a big problem. Certainly if some countries adopted the Tobin tax but others didn't, the foreign exchange trading would simply move to where it was not taxed. For this reason, everyone agrees that it would have to be imposed in virtually all countries, large and small, which would require more widespread support than seems possible.

Other varieties of proposals for capital controls are not practical for major developed countries. Examples include the *interest equalization tax* and the *dual exchange rate*, as proposed by Rudiger Dornbusch (1986), or the recent Eichengreen-Wyplosz proposal for *deposit requirements on domestic-currency loans* from domestic banks to foreign residents.

⁷ Frankel (1996).

3.3 More formal institutions for intervention:

Multilateral intervention fund, as proposed, for example, by Michel Camdessus (1994), to be administered by the IMF.

Target zone, a la ERM. The developments of 1992-93 make this option look less attractive. As long as France, Italy and Spain had capital controls, in the 1980s, the ERM worked. But by 1990, when the German reunification shock hit, such controls had been removed. Intervention postponed the exchange rate adjustment, but only for two years. The episode proved once again the Impossible Trinity: you can't have exchange rate stability, financial openness, and monetary independence all at once.

Target zone, a la John Williamson (1987). This proposal has the virtue that the central parity is regularly adjusted when fundamentals so dictate, e.g., if inflation is higher in one country than another, so that crises are less likely. But this improvement regarding practicality also seriously vitiates the two standard arguments in favor of the ERM-style target zone: the nominal anchor, and the "honeymoon effect" whereby private speculation supposedly helps drive the currency away from the zone limits if speculators know that there won't be a realignment.

Those calling for radical reform of the international monetary system can be usefully classified in a two-by-two table, distinguishing them, first, by their convictions regarding whether the markets always know better than the governments, and second by whether their proposals call for international cooperation or -- to the contrary -- are motivated by a desire to let governments choose monetary policies independently of each other.

Table 1: Four Schools of Radical Reform

	MARKETS KNOW BEST	NEED GOVT. ACTIVISM
WANT NATIONAL INDEPENDENCE	Pure free float works best. (Friedman & Monetarists)	Anti-speculator controls. (Tobin, Dornbusch...)
WANT AN INTERNATIONAL AGREEMENT	Discipline from fixed rates / gold standard (Mundell & Supply-siders)	Activist international cooperation (Bergsten, Williamson...)

The list is not complete without a mention of Ronald McKinnon (1988). He is unique in combining elements of each of the other schools. First, he believes that foreign exchange markets left to themselves are excessively volatile, as does the Tobin-Dornbusch school. Second, he believes that PPP is a useful guide for setting the exchange rate, as do the monetarists. Third, he believes that devaluation is not a useful instrument for adjusting relative prices or improving the trade balance, as the supply-siders. And fourth, he believes that the world needs a tripartite monetary agreement (among the US, Japan and Germany) to govern world monetary policy, as the Bergsten-Williamson school.

Having looked over the various proposals for radical reform, one is left wondering whether their drawbacks are not greater than those of the present system of (managed) floating, as imperfect as it is.

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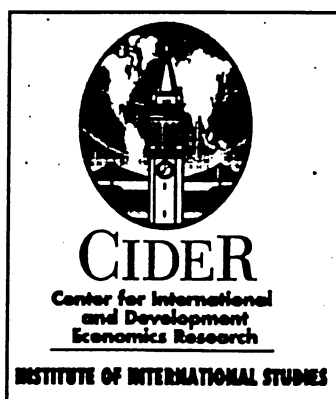
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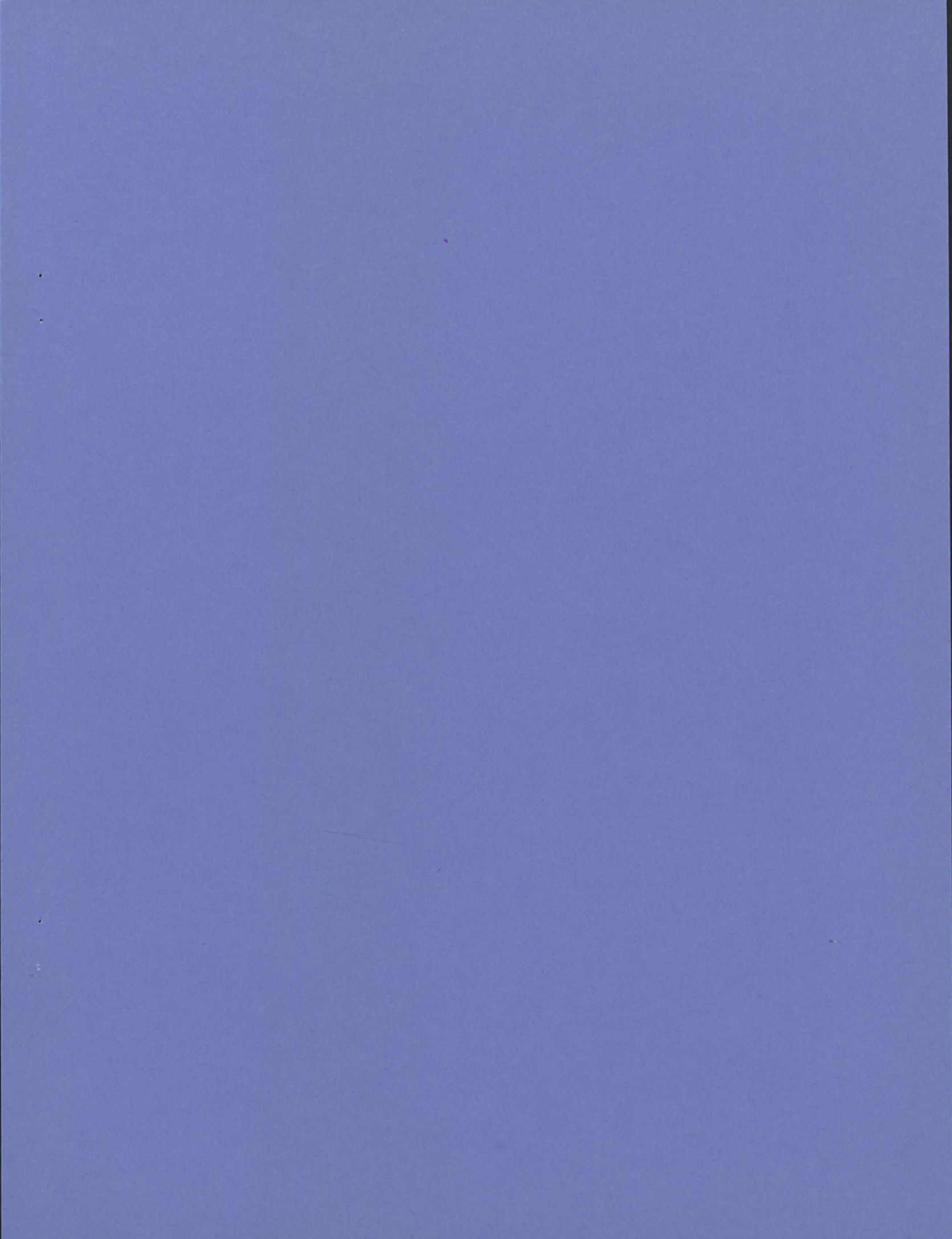


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