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Fiscal Affairs Department

Mali

Automatic Fuel Pricing Mechanism

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Mark De Broeck and Roland Kpodar

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AUTOMATIC FUEL PRICING MECHANISM

Mark De Broeck and Roland Kpodar

October 2013

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PREFACE

At the request of the Malian Ministry of Finance, a technical assistance mission visited Bamako during August 12–21, 2013. The purpose of the mission was to identify issues and options that need to be considered when adopting an automatic petroleum product pricing mechanism. The mission was led by Mr. Mark De Broeck and also comprised Mr. Kangni Roland Kpdodar (both from the IMF's Fiscal Affairs Department).

The mission met with Mr. Mamadou Traoré, Minister of Economy and Humanitarian Action, Mr. Abdel Karim Konaté, Minister of Finances, Mr. Makan Tounkara, Minister of Energy and Water, Mr. Ibrahima Dansako, Deputy Director General of ONAP, Mr. Moumouni Dembélé, Director General Customs, and Mr. Mahamadou Lamine Samaké, Deputy Director General, Taxation Directorate-General, Ministry of Finance

The mission also met with the stakeholders in fuel pricing issues represented in the fuel price monitoring commission, including representative from consumer advocacy groups, domestic and international oil companies, transport associations, and mining companies. The mission's findings were discussed with World Bank staff. The mission is grateful to all its interlocutors for the cooperation and fruitful discussions.

The mission would like to express its sincere appreciation for the excellent cooperation, support and logistical assistance from ONAP staff, in particular from it received from Ministry of Economy and Finance officials, in particular from Mr. Modibo Diall, Chief of the Statistics and Administration Department, the mission's main counterpart.

The mission is also very grateful to the staff of the IMF Resident Representative's Office. Mr. Op de Beke, the Resident Representative, Mr. Bakary Traoré, the Office's economist, provided first-rate assistance with organizing the mission at short notice and very valuable advice on the mission's work. Mrs. Nafissatou Koné, the Office's administrative assistant, provided excellent support.

ACRONYMS

CFA: Communauté Financière Africaine

CIF: Cost, Insurance and Freight (CAF in French)

ONAP: Office National des Produits Pétroliers

TIPP: Taxe Intérieure sur les Produits Pétroliers

VAT: Value Added Tax

WAEMU: West African Economic and Monetary Union

EXECUTIVE SUMMARY

Mali stands to benefit from moving from the current discretionary approach to fuel product pricing to a transparent and automatic price adjustment mechanism. A pricing formula exists, but it is not automatically implemented. Instead, pump prices are kept unchanged for prolonged periods, while discretionary changes in tax components included in the formula compensate for a widening gap between domestic retail prices of key fuel products and import parity prices. This has resulted in important revenue losses and higher volatility of fuel tax revenues.

This report discusses automatic pricing mechanism options and identifies issues that need to be addressed for the application of such a mechanism. Although full pass-through of international price changes to domestic prices is desirable over the medium term, some smoothing of the adjustment may be desirable in the short term. In particular, policymakers may wish to avoid sudden, sharp increases in domestic retail prices, especially if it is unclear if they are part of a trend. This can be achieved through alternative approaches to price smoothing, which are discussed in the report. Smoothing also avoids a "wait-and-see" approach to international price increases, which typically leads to delayed adjustment and escalating fiscal costs. The choice of price smoothing mechanism involves a trade-off between lower retail price volatility and higher revenue volatility. To inform this choice, the report shows how alternative smoothing approaches would perform.

Transition to an automatic application of an improved pricing formula can start immediately. It involves (i) using the import market value to calculate customs duty and VAT, and some restructuring of the existing formula's tax components to clearly show the revenue loss component; (ii) specifying the target net tax for each product; and (iii) setting the smoothing rule, if any, and timeline for initial price adjustments towards the targeted tax level.

The transition to the automatic pricing mechanism should be supported by various reforms. The responsibilities of each of the parties involved in the application of the automatic pricing mechanism could be clarified. The formula's cost and margin components should be reviewed and guidelines for their regular updating developed. Furthermore, more autonomy could be given to the government body in charge of formulating and implementing pricing policies**,** so as to help de-politicize fuel pricing.

Although smoothing can help to mitigate the adverse impact of price increases and volatile international fuel prices, additional supporting policies are warranted. In particular, an effective safety net is required to protect the poorest and most vulnerable groups from the adverse impacts of sizeable domestic fuel price increases. Public expenditures that benefit the population as a whole (e.g., education, health, and public

infrastructure spending) should also be protected or expanded to emphasize the benefits of protecting the budget from escalating revenue losses and to build broad public approach for the automatic mechanism. An effective public information campaign to explain costs of the current practice and the benefits from such a mechanism can help to reinforce public support.

I. BACKGROUND

1. **The Malian authorities are planning to apply an automatic fuel pricing mechanism to avoid an escalation of revenue losses and reduce the volatility of fuel tax revenues.** Currently, while a pricing formula is in place, retail prices of gasoline, diesel, kerosene, and fuel oil are subject to indicative price ceilings that are irregularly adjusted to international fuel price movements. This policy has translated into significant revenue losses for the government and increased revenue volatility. The application of an automatic pricing mechanism, which will pass through changes in international fuel prices to domestic retail prices on the basis of a pricing formula, is intended to protect the budget from the fiscal risk inherent in the current approach to pricing. It will also serve to increase transparency and depoliticize fuel product pricing.

2. **This report presents recommendations for phasing in the application of an automatic mechanism, presents different price smoothing options available to the authorities and discusses supporting reforms and public information requirements.** Section II describes the market structure of the fuel products sector in Mali, and section III the current approach to fuel pricing and its fiscal implications. Section IV discusses the design of automatic pricing mechanisms, with an emphasis on the different options available for avoiding sharp increases in retail prices while also ensuring full pass through of changes in international fuel prices over the medium term. Section V identifies supporting measures to facilitate reform of the fuel pricing mechanism, including measures to mitigate the adverse social consequences of any sustained increase in domestic retail fuel prices. The mission also presented supporting fuel pricing templates to and shared them with the government technical team.

II. MARKET STRUCTURE OF PETROLEUM PRODUCT SECTOR[1]

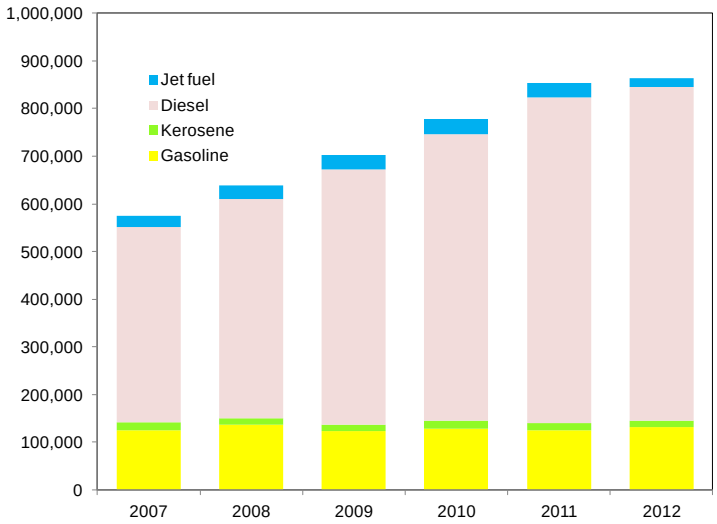
3. **Mali's consumption of fuel products is entirely met through imports**. The country does not have domestic crude oil production or a refinery. As Mali is a landlocked country, imports are transiting through port facilities in neighboring countries, with the closest port, Abidjan, about 800 miles away from Bamako. The ports of Abidjan and Dakar are the main supply sources, together accounting for about two thirds of total imports.

4. **Total imports grew steadily at a rate of near 8 percent during 2007–11, but fell to less than 2 percent following the economic recession in 2012** (Figure 1). Imports of

[1] For additional information on the structure of the domestic fuel product sector in Mali, including from a comparative perspective, see World Bank (2010) and World Bank (2011a).

diesel in particular increased rapidly during 2007–11. Diesel is also the most consumed product, with about two thirds of imports for retail distribution and the rest for electricity generation and mining production.

Figure 1. Fuel Product Imports 2007–12
(in metric tons)



Sources: National authorities and IMF staff estimates.

5. **An *Office National des Produits Pétroliers* (ONAP) has been set up to help formulate and implement fuel product supply and pricing policies in Mali.** The ONAP is a semi-autonomous body reporting to the Ministry of Economy and Humanitarian Action, and was created in 1992 in the context of a liberalization of domestic fuel supply activities. Its main task is to prepare each month a price structure of fuel products taking into account movements in supplier prices, taxes, margins and transport costs.

6. **The import of fuel products has been fully liberalized**. About 60 companies, including some multinational companies, acquire products at coastal supply points, transport them to Mali, and distribute them internally. Most of the domestic companies are also involved in the trucking business, which has contributed to a shift in transportation mode from railway to road. The state is not any longer involved in importation or distribution of fuel products, but still owns through ONAP one of the country's five storage facilities, following unsuccessful efforts to sell or give it in concession to the private sector.

7. **Concerns about domestic supply shortages have prompted a costly supply source diversification policy.** The crisis in Côte d'Ivoire in 2002 disrupted fuel supply to Mali, and, combined with capacity constraints at the Dakar port and limited domestic storage capacity, has raised concerns about supply security. In response, ONAP has encouraged supply diversification, including by offsetting higher transportation costs with lower taxation. Alternative supply routes—from Lomé and Cotonou, for example—have come into use.

However, not only do these routes entail higher transportation costs, supplier prices are also generally higher. Currently nine different supply sources are used, and an additional two routes are being considered.

III. Fuel Product Pricing and Fiscal Implications

8. **The Ministry of Economy sets monthly fuel product tax rates and taxable values based on information prepared by ONAP and advice from a fuel price monitoring commission.**[2] The commission consists of representatives of the Ministry of Economy, the Ministry of Finance, oil importers and consumer associations. The commission for each fuel product and each supply route recommends the rate of the Taxe Intérieure sur les Produits Pétroliers (TIPP)—a specific excise tax—and the taxable customs value for the month ahead. Based on the commission's advice, the Ministry of Economy decrees and publishes the TIPP rates and taxable customs values for the month ahead. Reflecting these decisions, the ONAP calculates indicative retail prices for each product, which are valid for the whole country and which, while not formally binding, are generally perceived as price ceilings. In practice, pump prices are set near or equal to the indicative prices throughout the country.

9. **The formula for the indicative retail prices reflects the import costs of fuel products**. The prices incorporate the relevant average international oil prices in the previous month taken from an international pricing source (Platt) and converted from US dollar in CFA franc, plus a margin for storage cost in port facilities, fees and transportation costs from the supply points to the Malian borders. These transportation costs are based on railway charges.

10. **The pricing formula also reflects taxes and domestic margins and transportation costs.** Taxes include ad-valorem levies (customs duty and VAT) and the TIPP. The ad-valorem levies have a uniform rate,[3] in line with WAEMU requirements, but the TIPP rate differs for each individual product-supply route combination, a practice motivated by security concerns out of line with WAEMU directives.[4] A small fee is added on gasoline and diesel for road maintenance. In general, gasoline is more heavily taxed than diesel and kerosene. For instance, taxes account for 30 percent of gasoline prices, 22 percent of diesel prices, and only 3 percent of kerosene prices on the Dakar axe. Margins and transportation costs (from the border to Bamako) are added to the CIF import price and to the tax items to

[2] The "Commission de Suivi du Méchanisme de Taxation des Produits Pétroliers" was created in 2001.

[3] The customs duty rate is 10 percent for gasoline and diesel and 5 percent for kerosene; the VAT rate is 18 percent for all products.

[4] For a further discussion of the WAEMU petroleum product directives in the broader context of tax competition and revenue mobilization in WAEMA, see Mansour and Rota-Graziosi (2013).

determine the retail price at the pump. The size of the margins and of the transportation costs is determined in consultation with the stakeholders represented in the price monitoring commission. A summary pricing formula is presented in Table 1 and Figure 2 (for the Dakar axe, by way of example).

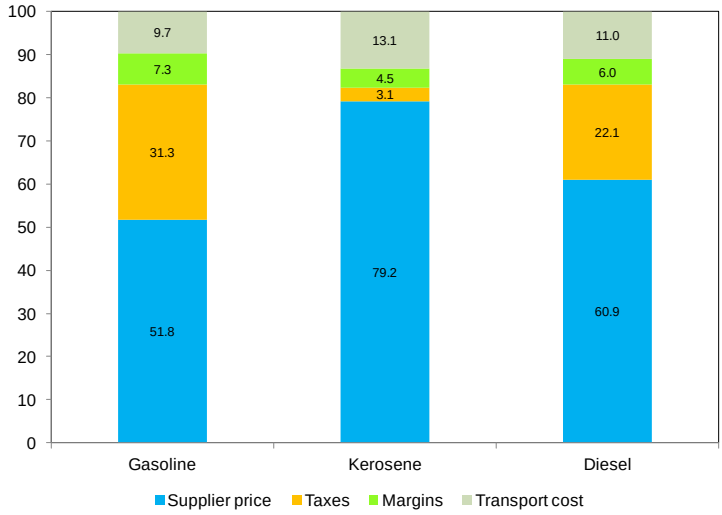
Table 1. Fuel Price Structure, June 2013 (Dakar Axe)
(CFA per liter)

	Gasoline	Kerosene	Diesel
CIF import price (1)	423	482	440
FOB price	388	447	405
Freight, insurance and fees	35	35	35
Taxes (2)	234	18	147
Custom duty (11.5 percent) a/	54	6	33
Excise (TIPP)	75	4	40
VAT (18 percent) b/	81	8	49
Road authority fee	25	0	25
Domestic margins and transport (3)	92	65	78
Margins (distribution and retail)	55	26	40
Transport charges and fees	38	39	38
Pump price [(1)+(2)+(3)]	750	565	665
Memo items			
Taxable custom value	300	3	172

a/ Includes the *Redevance Statistique* and *Prélèvement Communautaire.* The taxable base consists of the taxable customs value set in the monthly price decree.
b/ The VAT tax base includes the taxable customs value, actual customs duty, excluding the *Prélèvement Communautaire*, and the TIPP.

Source: ONAP.

Figure 2. Fuel Price Structure for Imports through Dakar, June 2013
(percent)



Sources: National authorities and IMF staff estimates.

11. **The formula equalizes indicative retail prices across import routes and across the country's cities and regions.** With supplier prices and transportation costs differing significantly by supply sources, ONAP for each product calculates an average supply cost and an average TIPP rate for all supply sources. ONAP then differentiates the TIPP rate for the product in question by source to equalize indicative retail prices. Thus, the cheaper sources are taxed more heavily than the more expensive ones. In addition, the indicative retail prices are set at the same level for the country as a whole, even though the formula only accounts for transportation costs from supply sources to Bamako. In practice, pump prices are nearly the same throughout the country, suggesting that importers/distributors are equalizing themselves across the country within their own accounts, taking into account additional or alternative domestic transportation costs. For domestic fuel product companies, this is facilitated by combined ownership of distribution and transportation activities.

12. **The pricing formula in its current format suffers from several shortcomings**. First, the formula is not transparent: the TIPP rate differs for each product-supply route combination, and can be changed discretionarily each month to stabilize retail prices and equalize them across import supply sources.[5] TIPP rate changes obscure the revenue loss

[5] The customs duty rate and the rate of the *Prélèvement Communautaire* are set by the WAEMU, and cannot be changed unilaterally by its member countries.

relative to import parity pricing.[6] Transparency is further reduced by having the monthly price decree set a taxable customs value ("valeur en douane") that can differ substantially from the actual import value ("prix CAF frontière Mali"), and that reflect retail price stabilization considerations and VAT collection targets .[7] Second, the parameters in the formula have not been adjusted in recent years and do not reflect anymore the true cost of services. For instance, transportation costs have not been updated for more than 20 years, and still are based on railway fees, even though more than 90 percent of fuel products are now transported by roads. Similarly, margins have not been updated for more than 10 years.

13. **In practice, the formula is not any longer applied for its original main purpose, to translate changes in cost components into retail prices.** Rather, the TIPP rate, and at times other components,[8] is adjusted discretionarily to stabilize retail prices, resulting in less than full pass-through of international price increases (Figure 3). For example, the average TIPP on gasoline dropped from 140 FCFA/liter in 2010 to 24 FCFA/liter in 2011 as an increase in international oil prices was not passed through. Indeed, international gasoline prices went up by 30 percent in 2011, but retail prices only rose by 5 percent during the same period. Gasoline TIPP recovered to 70 FCFA/liter in 2012 as international oil prices leveled off and pass-through improved. Diesel and kerosene TIPP rates were nearly nil in 2011, but were also raised again in 2012.

14. **The authorities' fuel pricing policy in practice focuses on retail price stabilization.** The stated three main goals of this policy are to raise adequate fiscal revenues from fuel products; ensure sufficient margins to encourage efficient operation and investment in the sector; and stabilize retail fuel prices.[9] The authorities endorsed a policy to pass through international price movements onto retail prices in 2001, following the reform of fuel product taxation, and reiterated this policy in February 2010. In practice, however, the price stabilization objective dominates. During past episodes of sustained increases in international oil prices, pass-through was kept very limited, because of the impact of fuel product prices on production costs and consumer purchasing power. This has come at the cost of substantial revenue losses and, occasionally, margin compression.

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[6] The TIPP is a component of the VAT tax base ("base TVA au cordon douanier"), and changes in the TIPP rate translate in changes in the VAT tax base that are unrelated to international fuel price movements. For instance, the VAT tax base for diesel and kerosene was reduced substantially in 2011 as the TIPP rate on these products was cut to shield retail prices from increases in international prices.

[7] Information on the taxable customs value is now included in the published retail price structure, an improvement from the transparency point of view.

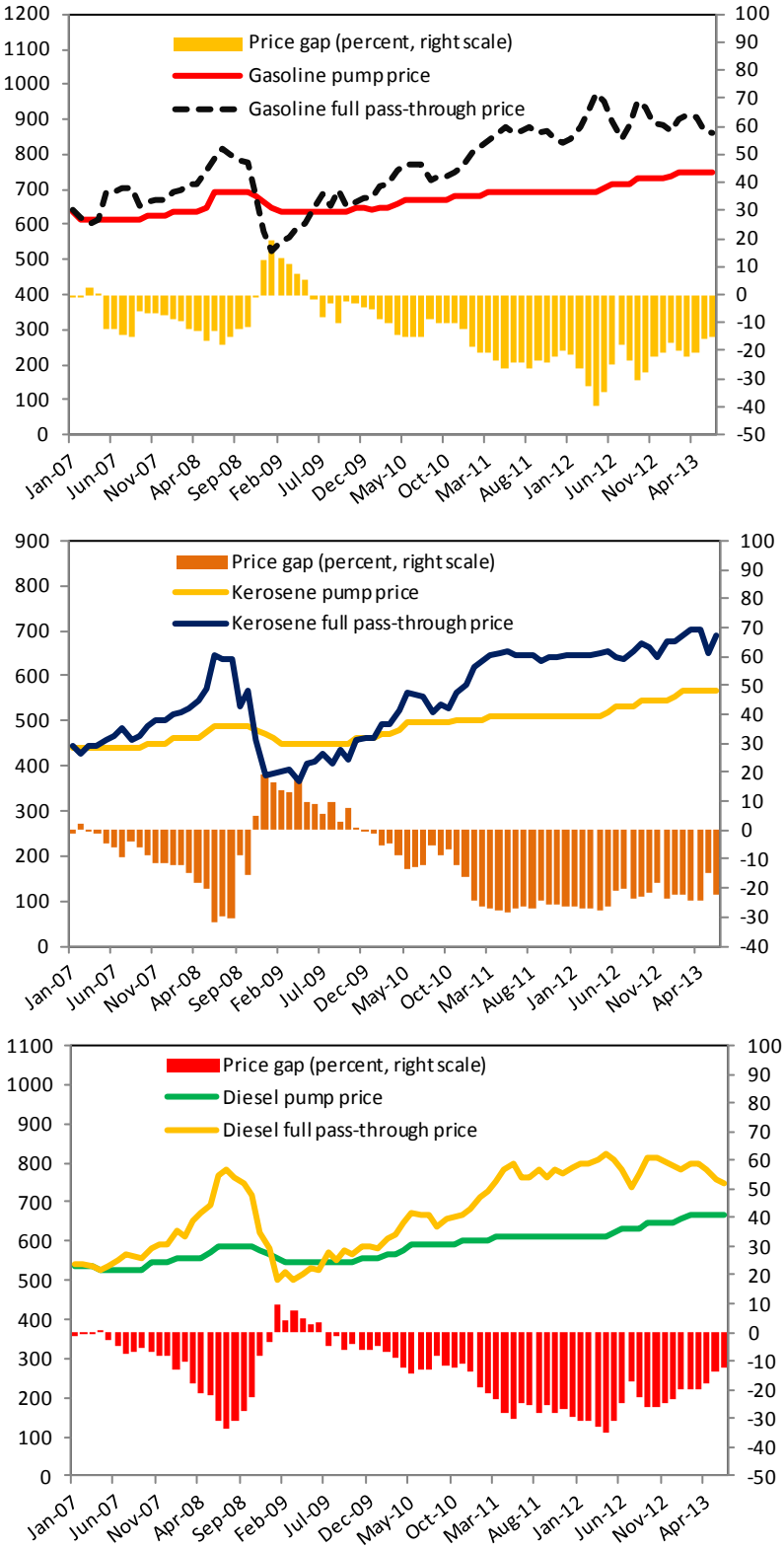
[8] For instance, adjusting margins temporarily downward is another tool the authorities have used to contain retail fuel price increases.

[9] An additional key consideration is contributing to supply security through diversification of supply sources.

15. **Retail price smoothing has translated into substantial revenue losses and high fuel revenue volatility.** Using the 2007 TIPP rate as reference, [10] fuel subsidies in the form of lost revenues rose as a share of GDP from near zero percent in 2009 to 2.4 percent in 2012. Fuel product revenues were as high as 2 percent of GDP in 2009–10, but sharply fell to 1 percent of GDP in 2011–12. Revenues were also more volatile than would have been the case under a constant TIPP rate set at its 2007 level. The revenue loss and the volatility are driven by both cuts in TIPP rates and reductions in the decreed taxable custom values—which not only reduce custom duties, but also erode the taxable VAT base—when international fuel prices increase. By product, revenue losses on diesel are the largest component, in part reflecting this product's dominant share in imports. By product and tax instrument, a lower TIPP rate is the main component contributing to the revenue loss for gasoline, and a customs value below the import market value the one for the other two products (Figures 4 to 6).

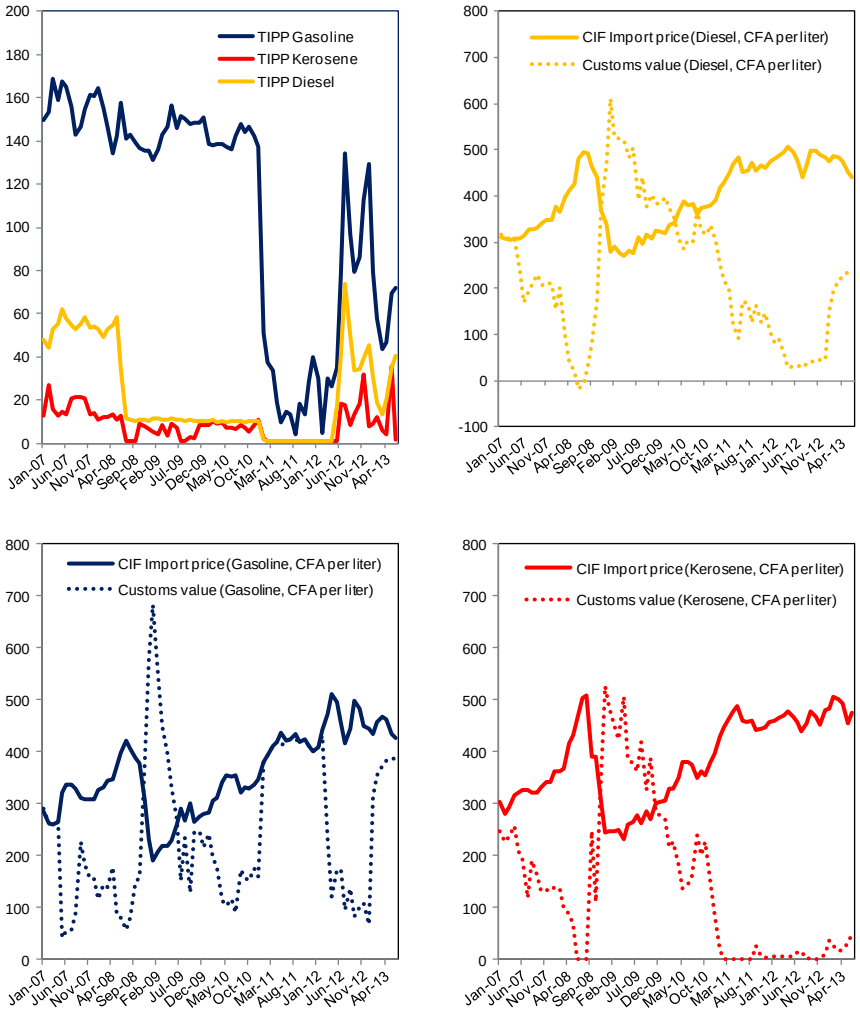
[10] The average level of fuel taxation in 2007 is taken as a reference taking into account that the TIPP rate was relatively stable during that year.

Figure 3. Domestic Fuel Prices
(CFA per liter)



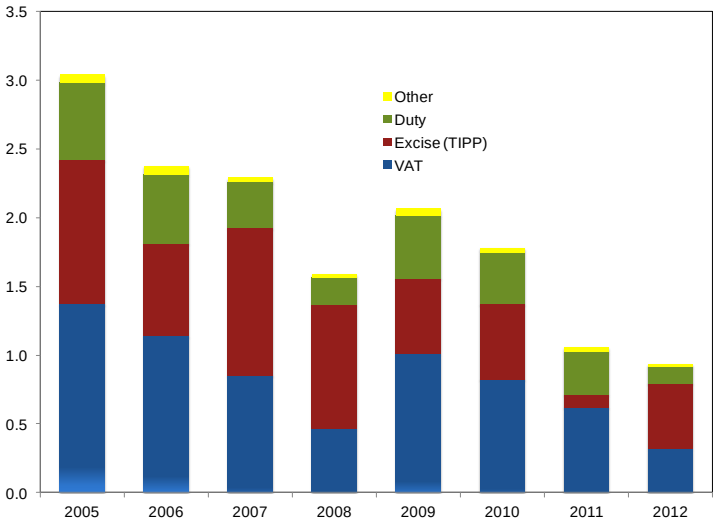
Sources: National authorities and IMF staff estimates.

Figure 4. Excise Tax (TIPP) and Customs Revenue Base
(CFA per liter)



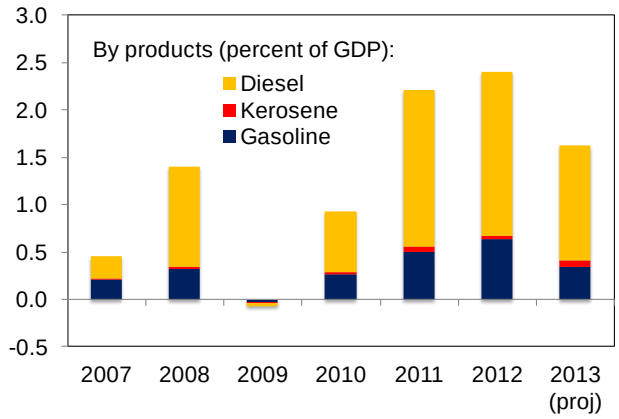
Source: ONAP.

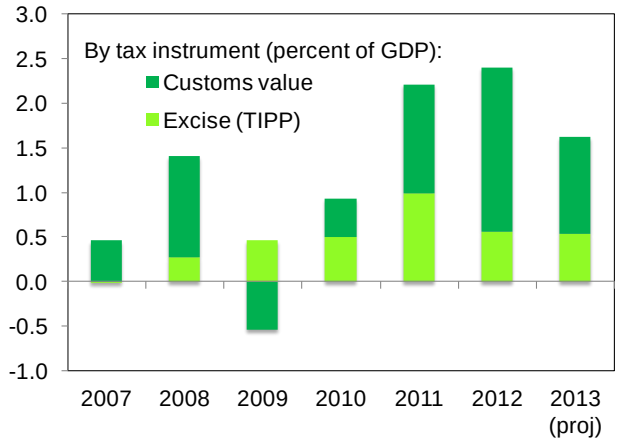
Figure 5. Fuel Product Revenue
(percent of GDP)

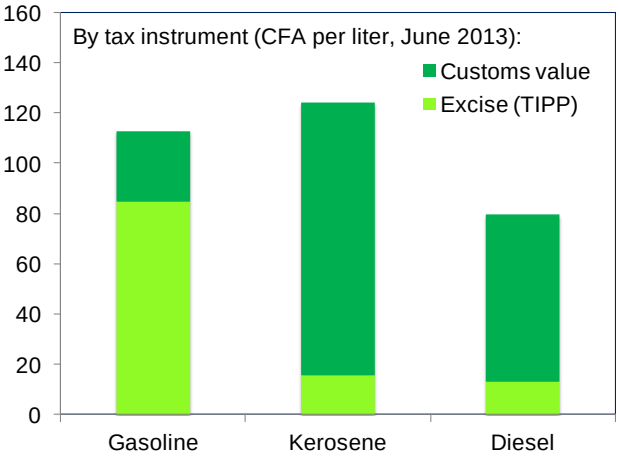


Sources: National authorities and IMF staff estimates.

Figure 6. Revenue Loss from Current Price Structure
(percent of GDP)







Sources: National authorities and IMF staff estimates.

16. **Fuel subsidies in the form of lost revenue mainly benefit the higher income groups.**[11] Households in the higher income groups tend to spend more on diesel and gasoline, in terms of both the proportion of households purchasing these products and the amount of spending per capita (World Bank, 2013b).[12] Households in the higher income groups also spend relatively more on goods and services with an important fuel product component, notably transportation.

17. **Various tax exemptions on fuel products cause additional revenue losses in the range of 0.5 to 1 percent of GDP.** Notably, value added related to the domestic distribution and sale of fuel products is not subject to the VAT. Furthermore, fuel product imports by mining companies, and for electricity production and large infrastructure projects are exempt from most taxes.[13] Fully eliminating subsidies and exemptions could more than triple current fuel revenue.

18. **Using the 2007 TIPP rates as reference, reversing the revenue losses from not adjusting retail prices in recent years would result in a 12 to 22 percent increase in retail prices, depending on the product.** Following significant retail price increases in early 2013 and with the decline in international oil prices in the first half of the year, the price gap has narrowed. As of June 2013, the required price increase to bring fuel prices to full pass-through levels at the 2007 TIPP rate would be highest for kerosene, at 22 percent, followed by gasoline, 15 percent, and diesel, 12 percent.[14] Even with such increases applied, retail fuel prices would still remain below the ones in Senegal, the main supply source of Mali (see the cross-country data on fuel product prices in WAEMU in Annex Figure 1).

[11] The product with the highest subsidy (lowest taxation) per liter is kerosene, which is relatively more consumed by households in the lower income groups. However, total kerosene subsidies are negligible, reflecting the very low quantities consumed.

[12] The 2010 ELIM household survey indicates that the lowest income quintile spent 4.2 percent of its household budget on fuel products, while for the highest income quintile this was 5.7 percent. In terms of fuel-intensive products, transport accounted for 4.5 percent of the household budget for the lowest income quintile, compared with 10.3 percent for the highest income quintile.

[13] Article 134 of the revised mining code adopted in 2012 sets the conditions for exempting mining companies from selected taxes. Individual concession agreements include more specific stipulations.

[14] Of this, eliminating the use of taxable customs value would result in a 19 percent increase in the kerosene pump price, a 4 percent increase in the gasoline pump price, and a 10 percent hike for the diesel pump price.

IV. AUTOMATIC FUEL PRICING MECHANISM[15]

A. Objectives, Main Principles, and Policy Options

19. **The adoption of an automatic price adjustment mechanism is intended to achieve a number of objectives:**

- *Ensure changes in international fuel prices eventually are fully reflected in domestic retail prices.* Higher retail prices for fuel provide greater incentives to reduce fuel consumption. Reduced consumption of fuel in periods of high international prices is the most efficient approach to mitigating the adverse terms-of-trade impact on the economy, and helps avoid shortages of foreign exchange in the market and losses of international reserves. Low prices relative to neighboring countries can lead to cross-border smuggling and disruption of local markets, with the subsidies benefiting consumers in neighboring countries.

- *Reduce the level the revenue loss and the revenue volatility resulting from incomplete adjustment of retail prices to international price movements.* The tax revenue shortfall crowds out higher priority public expenditures required to promote growth and poverty reduction and may necessitate increases in other distortionary taxes. In addition, excessive volatility of tax revenues creates cash management and financing problems for the Treasury, especially when financial markets are underdeveloped. However, lowering fiscal volatility comes at the cost of increasing retail price volatility.

- *Depoliticize fuel price adjustments.* Reliance on discretionary interventions in the fuel pricing mechanism creates political pressures that often result in delayed price adjustments, unsustainable fiscal costs, and margins that are insufficient to ensure an appropriate level of profitability for fuel product distributors and suppliers and promote investment in the sector.

20. **Implementing an automatic pricing mechanism requires agreement on what the appropriate level of taxes, transportation costs, and distribution margins are; and on how and at what pace import price fluctuations are passed through to retail prices.** This involves a number of steps:

- *The specification of the price structure (i.e., formula) by product.* This structure establishes a clear link between retail prices and import prices based on import costs, transport and distribution margins, and tax levels. The import cost is the appropriate reference price for calculating subsidies, and import prices should reflect both international fuel prices and the exchange rate. Handling and distribution costs as well as

[15] For a more extensive discussion of automatic fuel price mechanisms, see Coady et al. (2012).

margins should be based on efficient operations by suppliers. The level and structure of taxes should reflect revenue, efficiency, and distributional objectives (Box 1).

- *The specification of a timeline for updating the components of the price structure.* The different components of the price structure should be updated according to an explicit and agreed timeline. For example, the import cost could be updated on a monthly basis. Transport and distribution costs could be updated semi-annually or annually based on a simple rule linked to validated changes in costs such as wages, transport costs, and financing costs. More rigorous updates could be done on a 3–5 year cycle based on a detailed market study. Once the government sets a desired tax level for fuel products, the implementation of the formula determines any tax changes.

- *The specification of a rule determining when retail prices are changed and by how much*. For example, retail prices could be changed monthly to ensure full pass-through of any changes in import or distribution costs so as to keep tax levels constant, or to reflect fully the changes in tax levels determined by the formula. Smoothing mechanisms can also be considered, as discussed below. A basic principle underlying the pricing mechanism is that differences between changes in import prices and retail prices should be fully reflected in changes in specific taxes (or explicit subsidies) in the price structure, and should not affect the derivation of the structure's other components.

Box 1. The Level and Structure of Fuel Taxes

In general, the level and structure of fuel taxes should reflect the revenue requirement of the government, as well as efficiency and equity objectives.

*Revenue requirements***:** Average fuel product taxes should reflect the total revenue requirements of the government and the importance of indirect taxes in total revenues. The higher the revenue requirements from indirect taxes, the higher should be the tax rate on all goods and services, including fuels.

*Efficiency of revenue generation***:** Since fuel taxation is seen as a relatively efficient source of revenue, due to fuel demand being relatively insensitive to price, the desirable average fuel tax is typically thought to be above the average tax on other goods and services. This is reinforced by the negative externalities, such as environmental pollution and traffic congestion, associated with fuel consumption. The structure of fuel taxes should also minimize the distortion in the pattern of consumption across fuel products. Therefore, to the extent different fuel products are thought to be very close substitutes, especially over the long run, an efficient structure of fuel taxes should involve little differentiation in tax rates across fuels. The argument for uniformity of fuel taxes is often thought to be relatively strong for diesel and kerosene since these are seen as being especially close substitutes, but this is not a major concern in Mali, as consumption of kerosene is very limited..

Efficiency of fuel supply: The cost components in the price structure should provide the proper incentives to suppliers and distributors to operate efficiently and invest.

*Income distribution***:** Concerns for income distribution mean that taxes on fuels for which the poorest households have a higher share in total consumption should be relatively low. Typically, kerosene is seen as being relatively more important for poor households and gasoline for non-poor households, and taxes could be kept relatively low on this product.

To determine an appropriate level of taxation of fuel products, a comparison with similar countries can also provide guidance. For instance, in June 2013, fuel product prices in Mali were below those in Côte d'Ivoire (except for diesel) and Senegal, in spite of the additional transportation costs for bringing these products to Mali (see Annex 1 figure). Estimates of fuel product subsidies in 2011 based on a price pass-through methodology indicate that subsidies in Mali were significantly above the average of oil-importing Sub-Saharian African countries (IMF, 2013d, Appendix Table 1 and Box 1). Relatively low fuel product prices and relatively high levels of subsidies in the form of revenue losses suggest room for higher taxation.

21. **Some smoothing of short-term retail price volatility may be desirable.** Full pass-through over the medium term is necessary to achieve fiscal objectives and encourage efficient fuel consumption patterns. However, governments may wish to avoid sharp increases in domestic prices in response to international price hikes, especially if the latter turn out to be temporary. This can be achieved through a range of approaches to price smoothing, as discussed below. Under all these smoothing rules, suppliers always receive prices reflecting the actual import and distribution costs agreed in the formula, and so are indifferent to the choice of a particular rule. Smoothing will also avoid a "wait-and-see"

approach to passing through rising international prices, which typically leads to delayed price adjustment and escalating fiscal costs. However, reducing the volatility of retail prices is achieved at the expense of increasing fiscal volatility.

22. **The appropriate choice of smoothing mechanism depends on the how the government views the trade-off between price and fiscal volatility.** A range of smoothing mechanisms is possible, including:

- *Price band mechanisms*: This mechanism sets the maximum limit on the magnitude of retail price changes. Caps can be set as a proportion of the current retail price or in absolute amounts. For example, at the start of each month the retail price according to the full pass-through mechanism is determined based on last month's average import cost. If the required retail price increase is above the maximum allowed increase (i.e., the cap), then only the maximum allowed increase is implemented. If the implied price increase is below this threshold, then the full adjustment is allowed. For example, under a 3 percent price band, if the international price increases by 10 percent, the domestic retail price would increase by only 3 percent. In the subsequent period, if there is no change in the international price, the domestic retail price would still increase by another 3 percent. This mechanism thus allows the domestic retail price to gradually catch up to international price levels. This mechanism would operate in both directions. Limiting the size of the price decline and the related revenue decline is important for medium term fiscal sustainability.

- *Moving average mechanisms*: This mechanism bases retail price adjustments on changes in the average of past import costs. For example, at the start of the month the retail price under the formula is calculated using an average of past import costs (say, the average of import costs for the last three months). Retail prices are then allowed to fully adjust to the smoothed formula import price. Using longer averaging periods will reduce the magnitude of price changes and price volatility.

23. **Price bands and moving averages have different smoothing properties.** Price bands smooth retail price adjustments by directly restricting the magnitude of monthly retail price changes. They allow quick adjustment to current international price changes and are simple to explain and implement, but they may result in continuously declining tax levels if international prices exhibit sustained fast increases. In this case, additional "tax adjustment rules" may be warranted.[16] Moving averages stabilize retail prices by smoothing changes in the import cost component used in the pricing formula While moving averages can adjust more effectively to sustained rapid international price increases, their reliance on historical international prices means they take longer to adjust to sharp changes in the directions of

[16] For a more detailed discussion of an additional rule ensuring that tax levels do not fall below a set floor for a prolonged period see Coady et al. (2012).

international price movements, especially when averages are based on prices over many past months. Opposite movements in international and retail fuel prices could cause confusion among the public.

B. Choice of Pricing Mechanism

24. **An illustrative analysis can clarify the implications of alternative automatic pricing mechanisms on retail fuel prices and taxes.** For the purpose of this analysis, which was presented to the authorities, six smoothing mechanisms were considered: (i) 2-month, 4-month, and 6-month moving averages; and (ii) 3 percent, 5 percent, and 10 percent price bands. These mechanisms are compared to historical (actual) retail prices and to a full pass-through without smoothing over the short term.

25. **Smoothing mechanisms can substantially reduce the volatility of retail price changes compared to immediate full pass-through, and also prevent the large price increases that could be experienced if the current pricing formula was applied without adjustments in the TIPP rate and taxable customs values.** Compared to the full pass-through scenario, smoothing mechanisms were found to reduce the volatility of retail prices, in terms of both the standard deviation of retail prices and the average of squared price changes, which puts greater weight on large changes. In particular, smoothing avoids full pass-through of temporary sharp increases in prices. In addition, the smoothing mechanism also avoids long delays in price adjustment.

26. **Smoothing mechanisms can also ensure higher and less volatile tax levels compared to the current approach to pricing.** Although, by design, the reduced volatility of retail prices under a smoothing mechanism results in increased volatility in taxes relative to the full pass-through scenario (for which tax levels are fixed at the target benchmark level), the volatility is lower than in the historical case using the current pricing mechanism with discretionary adjustments in the TIPP and the taxable customs value. The smoothing mechanisms also perform better in terms of avoiding large tax variations, which may be more difficult to manage under financing constraints. This is shown by the average of squared tax changes, which puts a greater weight on larger variations, being lower under smoothing mechanisms. Smoothing can avoid the largest tax decreases that have occurred historically too.

27. **The choice of a smoothing mechanism involves a trade-off between retail price volatility and tax volatility.** By design, greater smoothing of domestic prices results in greater tax volatility, as reflected in the standard deviation of prices and taxes being negatively related. Therefore, the choice among smoothing mechanisms will depend sensitively on the precise weights given to each of these objectives. From a political economy and social perspective, however, pricing mechanisms that avoid large retail price increases, especially when import cost increases turn out to be temporary, are desirable. From a fiscal management perspective, mechanisms that avoid large decreases in tax levels may

also be desirable. Taking into consideration all these objectives, price bands perform better than moving averages in terms of rankings across price and tax volatility indicators. Price bands have the added advantage of being easy to explain publicly and implement within the current system that requires the calculation of monthly retail prices based on actual import prices (as opposed to smoothed import prices under moving average methods).[17]

V. REFORM RECOMMENDATIONS

A. Pricing Mechanisms

28. **The process for transition to the application of an automatic adjustment mechanism can begin immediately.** The following sequential steps can be taken:

- ***Simplify and improve the transparency of the current pricing formula.*** The current formula is conceptually overall sound, but has been unnecessarily complicated by monthly adjustments in the TIPP rate motivated by revenue targets and ceilings on retail price changes, and by differentiating the TIPP rate for each individual product-supply route combination for supply diversification purposes. The TIPP rate should be unified across supply routes, and the taxable customs values determined directly in function of the CIF import price at the border. The use of actual CIF values has the advantage of being consistent with the international trade statistics and to allow a proper assessment of the balance of payments. If the authorities for supply security reasons want to continue to support certain more expensive supply routes, this could be done through an explicit subsidy differentiated by route, calculated by ONAP and transparently reported within the formula as a separate item. Table 2 illustrates, taking as example the June 2013 price structure for the Dakar axe, a comparison of the authorities' presentation and the recommended one, how for a given TIPP rate (set at the 2007 reference rate) an adjustment/subsidy component can be calculated that achieves the same level of total taxes and duties, and the same indicative retail price. The difference between the subsidy component for a particular supply route and the one for the cheapest route is an indicator of the additional loss of revenue from tax incentives to diversify import supply routes, given the imported volumes and prices.[18]

[17] As discussed in Coady et al. (2012), when considering an additional rule ensuring that tax levels do not fall below a set floor for a prolonged period, price bands appear to perform better than other smoothing mechanisms. When performance in this dimension is combined with the performance in terms of tax and price volatility, price bands dominate all other smoothing mechanisms.

[18] This is an upper bound on the revenue loss from these tax incentives: import volumes and prices would likely change if the incentives were eliminated.

Table 2. Fuel Price Structure, June 2013 (Dakar Axe) Alternative Presentation
(CFA per liter)

	Detailed Fuel Price Structure, June 2013 (Dakar Axe)					
	Current price structure			Proposed price structure		
	CFA/HL unless otherwise specified					
	Gasoline	Kerosene	Diesel	Gasoline	Kerosene	Diesel
	HL	HL	HL	HL	HL	HL
Density	0.770	0.820	0.867	0.770	0.820	0.867
01 FOB price	38,848	44,746	40,531	38,848	44,746	40,531
02 Freight, insurance and fees	3,501	3,503	3,506	3,501	3,503	3,506
03 **CIF import price**	**42,349**	**48,249**	**44,037**	**42,349**	**48,249**	**44,037**
04 Custom duty rate (percent)	11%	6%	11%	11%	6%	11%
05 Custom duty 1/	4,215	319	2,600	4,658	2,895	4,844
06 Customs union levy rate (percent)	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
07 Customs union levy 1/	192	27	118	212	241	220
08 Excise (TIPP) 2/	7,528	355	4,007	15,710	1,724	5,415
09 VAT base	50,066	5,983	30,247	62,718	52,868	54,296
10 VAT tax 1/	9,012	1,077	5,444	11,289	9,516	9,773
11 Adjustment/Subsidy 3/				-10,922	-12,600	-8,082
12 **Total taxes and duties**	**20,947**	**1,777**	**12,170**	**20,947**	**1,777**	**12,170**
13 Road authority fee	2,500	0	2,500	2,500	0	2,500
14 Transport charges and fees	3,754	3,909	3,804	3,754	3,909	3,804
15 Distributor price	69,550	53,935	62,511	69,550	53,935	62,511
16 Margins (distribution and retail)	5,450	2,565	3,989	5,450	2,565	3,989
17 Margins (distribution and retail) - CFA per liter	55	26	40	55	26	40
18 Formula retail price	75,000	56,500	66,500	75,000	56,500	66,500
19 Formula retail price - CFA per liter	750	565	665	750	565	665
20 **Indicative retail price - CFA per liter** 4/	**750**	**565**	**665**	**750**	**565**	**665**
Memo items						
21 **Customs value**	**38,323**	**5,309**	**23,640**	…	…	…

1/ In the proposed price structure, the market value (CIF import price) is used to calculate customs duty, customs union levy and VAT.

2/ The excise tax in the proposed structure is a policy variable reflecting authorities' revenue objectives. The benchmark used here is the average level in 2007, a period during which the excise tax was relatively stable.

3/ The adjustment/subsidy is calculated as to make total taxes and duties equal in the two price structures.

4/ Indicative retail prices may be in some cases different from the formula prices due to rounding. The difference translates into lower distribution and retail margins than shown in the structure.

Source: ONAP.

- ***Decide on the target net tax for each fuel product and set the TIPP rates accordingly.*** The target can reflect the general considerations presented in Box 1, and can also be guided by cross-country information on fuel product taxation in the region (Annex I and IMF, 2013d). The target tax level, and corresponding TIPP rates, can continue to vary

across fuel products. For example, in line with current practice, the rate could be kept low for kerosene, as this product is mainly used by the poor. However, different from current practice and unless a smoothing mechanism is included in the pricing formula, the TIPP rate for each product should be kept constant over time. Monthly revenue projections could be derived from applying given tax rates to monthly projections of the volume and value of fuel product imports.

- ***Specify the approach to smoothing, if any, and the time interval for price adjustments.*** For example, if a 5 percent price cap is adopted with monthly price adjustment, the monthly price adjustment is then the difference between the new formula retail price and the current retail price, or 5 percent, whichever is smaller. This is achieved by temporarily adjusting the TIPP rate. Calculations following the principles recommended in this report and prepared for the 2013 Article IV Consultation with Mali (IMF, 2013d) conclude that a 3 to 5 percent price band could present the best trade-off between retail price volatility and tax revenue volatility. Nevertheless, in case of successive increases in international prices, a 3 to 5 percent price band would result in successive increases in retail prices. In addition, if needed, a floor on tax levels and related additional tax adjustment rule could be considered. Deviations of the actual TIPP rate from the constant TIPP target rate should even out over time and would be reported within the formula as a separate adjustment item (under line 11 in the recommended new presentation).

- ***Consider a one-off price adjustment when the automatic mechanism is first applied.*** If the targeted TIPP rates significantly exceed the current ones, a one-off price increase at the time the automatic mechanism is launched could help to avoid sustained large adjustments in the initial phase of its application, and a public perception that the automatic mechanism will only raise prices. A remaining gap between the targeted and the actual TIPP rates, if any, could be eliminated using the selected smoothing approach.

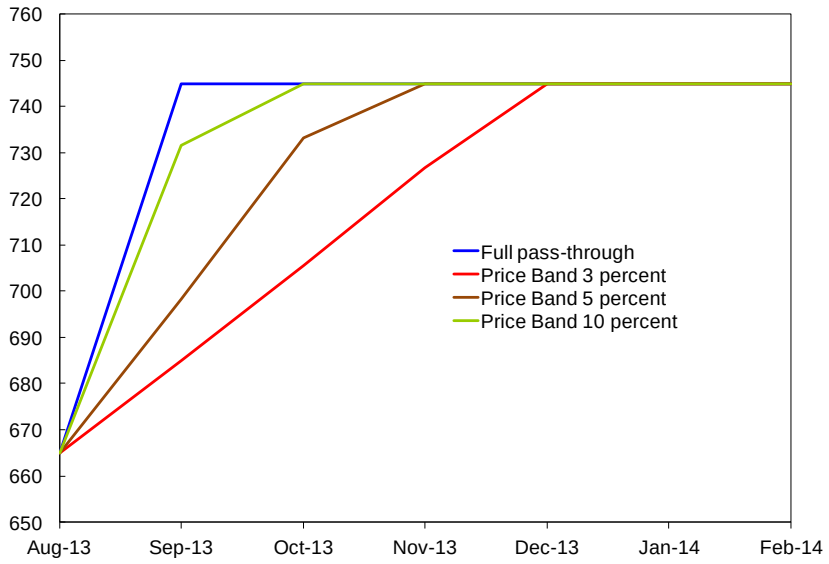
- ***Clarify the responsibilities of ONAP and the fuel price monitoring commission in the implementation of the automatic pricing mechanism.*** There needs to be clarity on the procedures that need to be followed to announce and implement price changes. This is necessary to ensure the timely and routine implementation of the mechanism.

- ***Commission a study on the cost components and margins of all fuel products under ONAP responsibility.*** A study of the cost components and margins used in the pricing formula is warranted, as is the development of guidelines for updating them at regular intervals. A five-year interval would be appropriate for this purpose.

29. **The speed of adjustment to target net tax levels and thus the magnitude of short-term price increases will depend on three factors.** First, the higher the target net tax level relative to current levels the larger price increases required. Second, the greater the extent of price smoothing adopted, the smaller the price increases but the longer the period of convergence to target tax levels. Third, the greater the increase in international fuel prices

following initial application of the automatic mechanism, the slower the speed of convergence to target tax levels. For example, with instant full pass-through and no change in international fuel prices, the retail price would increase by 80 FCFA per liter over the next month and immediately reach the target net tax (Figure 7). Under the 3 percent price band, monthly prices would increase by approximately 20 FCFA per liter over the next 4 months before reaching the target net tax by December 2013. Under a larger price band, monthly price increases would be larger over the next two to three months at which time it would reach the target net tax. Increases in international oil prices would delay the period of convergence, while reduction in international oil prices would shorten it.

Figure 7. Convergence to Diesel Full Pass-Through Price Under Different Price Bands Assuming No Change in International Oil Prices
(CFA per liter)



Source: IMF staff projections.

30. **Additional measures can be implemented to refine and reinforce the pricing mechanism.** First, the margins in the formula can be updated based on the findings of the commissioned study, and regular adjustments made thereafter. Second, with regard to fuel pricing issues, the ONAP could be transformed into an autonomous body responsible for implementing the new automatic mechanism. The fuel price monitoring commission's activities could also be made more autonomous. This should help to reinforce the public perception that price changes are determined by changes in international prices and outside

the control of the government, and thus de-politicize fuel pricing.[19] Third, a review of the cost of the various exemptions from fuel product taxation could be undertaken, and their streamlining be considered.

31. **The end goal of the fuel pricing reforms is full price liberalization.** In the medium-term, the government's role should be limited to ensuring effective competition in oil importation and distribution, enforcing safety standards, and creating incentives for holding emergency reserves. Once sufficient progress has been achieved in these areas, ONAP could discontinue the monthly determination of smoothed prices and focus on its other monitoring and regulatory responsibilities.

32. **A successful reform strategy requires proper timing and sequencing of the various reform steps.** The speed of reforms should reflect the social, political, economic and institutional objectives and constraints facing the government. Step 1 of the reform process, using import values to calculate import duties and VAT and changing the presentation of the pricing formula to transparently show the revenue implications of current price setting, can be taken immediately. A detailed study to analyze the appropriate level of cost components and margins in the formula could be commissioned right away too. The subsequent steps can be planned as follows:

- Step 2. Determine target TIPP rates for each product, select a smoothing mechanism for the automatic pricing formula, and launch a public information campaign to explain the need for reform and the new fuel pricing mechanism;

- Step 3. Adjust prices to a level consistent with the targeted TIPP rates. The adjustment could be achieved through an initial one-off price increase and further gradual increases following the smoothing rule. Once prices are in line with the targeted tax rates, the automatic pricing mechanism can be applied without any further one-off adjustment;

- Step 4. In tandem with steps 2 and 3, strengthen the social safety net, increase spending on education and health and introduce targeted measures to help ease the impact of fuel price adjustment on households with large spending on transportation services (see next section on supporting measures for more details);

[19] In addition, consideration should be given to eventually financing ONAP's activities in the fuel pricing area from an associated charge explicitly included in the formula. In line with its increased independence, corresponding provisions to ensure accountability such as through ex-post transparency and audit requirements would be needed. Regular reporting to the public on ONAP's operations and the implementation of the mechanism would also help strengthen its accountability.

- Step 5. Once the results of the detailed study to analyze the cost components and the margins in the pricing formula are available, update these items in the formula in view of these results.

- Step 6. Prepare a clear plan for fully liberalizing fuel product pricing with appropriate government oversight to ensure competition.

B. Supporting Measures[20]

33. **Reducing revenue losses through retail price adjustments can have adverse consequences for the population.** Full pass-through of international fuel prices could result in repeated retail price hikes, which could erode consumer purchasing power and augment production costs. An analysis of the 2000–01 Malian household survey data (Kpodar, 2006; and Kpodar and Djiofack, 2009) shows that households would have experienced a drop in household income of near 1 percentage point in case of a 10 percent oil price increase, with the impact differentiated by income quintile. A review by Arze del Granado, Coady, and Gillingham (2012) finds that, on average, a US$0.25 increase in domestic prices decreases household real incomes by 5 percent, with this impact being similar across all income groups. Therefore, it is important that reform strategies include measures to mitigate this adverse impact.

34. **Price adjustments need to be accompanied by measures to protect the poorest and most vulnerable from the impact of higher fuel product prices and help middle income groups to cope with it.**[21] Preparation for supporting measures should start immediately, with a view to introducing and implementing them in tandem with the the price adjustment toward the new targeted TIPP rates. Recognizing the weaknesses of existing social safety net programs and in collaboration with the World Bank, the Malian authorities already have adopted a strategy to set up an effective and comprehensive social safety net system—Box 2 provides an overview of the current social safety net, the new strategy, and a recent World Bank project to support it. As the elimination of gasoline and diesel subsidies will generate net savings for the budget even with higher social safety spending, other public expenditures that benefit lower- and middle-income groups, such as education and health expenditures, as well as infrastructure expenditures such as roads and electrification schemes, could be expanded. Public transportation initiatives could be considered for households especially affected by higher transportation costs.

[20] For an additional discussion of supporting measures, including cross-country comparisons, see IMF 2013a, 2013b, 2013c, and 2013d.

[21] For a further analysis of poverty and vulnerability issues and their interaction in Mali using household survey data, see Eozenou et al., 2013.

Box 2. Proposals to Strengthen Mali's Social Safety Net

An effective and comprehensive social safety net is required to reduce the extent of poverty, protect the most vulnerable from economic shocks, and address the root causes of poverty. While economic growth is crucial for sustainable poverty reduction, well-designed safety nets have an important role to play in ensuring that the poor are protected and share in the gains from growth, and eventually contribute to the growth process.

Mali has a number of social safety net programs, but they suffer from several weaknesses.[1/] These programs include transfers in cash and in kind (e.g., emergency food distribution, school feeding programs); temporary income support (e.g., public works for cash or food); and access to basic services (e.g., health fee waivers). The scope and scale of the existing programs is limited, however, with a combined spending of only 0.5 percent of GDP. The programs are designed as temporary responses to situations of immediate need, however, and are not targeted to the specific needs of the chronically poorest and most vulnerable. They are fragmented and, reflecting the absence of an appropriate institutional set-up for that purpose, are not well coordinated.

To address the weaknesses of the existing program and cover additional needs created by the crisis, the authorities have adopted a more systemic approach to safety nets. The objective is to set up in collaboration with the World Bank an effective and comprehensive safety net system which targets the poorest and most vulnerable. The authorities have incorporated an action plan for extending social protection in the Growth and Poverty Reduction Strategy Paper 2012–17 (GPRSP-3),[2/] and have centralized coordination and management of the new system in a single Ministry.

The authorities' strategy is supported by a World Bank project to provide well-targeted cash transfers and put in place the foundations of a country-wide safety net.[3/] The three-year project approved in Spring 2013 will make regular cash transfers over an extended period to around a quarter of the population below the poverty line. Targeting will be achieved through a combination of geographic indicators and community-based selection mechanisms. Accompanying measures will provide information on good child-raising practices to beneficiaries. In selected areas, in-kind nutrition packages will encourage preventive care for young children and pregnant women. The project will also lay the institutional foundations for rolling out a country-wide safety net. A unified registry of potential safety net beneficiaries will be set up and is intended to cover around half of the population below the food poverty line by end-2017.

1/ For a comprehensive analysis, see World Bank (2011b).

2/ Available at http://www.imf.org/external/pubs/ft/scr/2013/cr13111.pdf , and at http://www.imf.org/external/french/pubs/ft/scr/2013/cr13111f.pdf (French version).

3/ For more details, see World Bank (2013a).

35. **Although increasing retail prices to reduce fuel subsidies is always a politically sensitive issue, an effective public information campaign prior to reforms can increase public support**. [22] Preparation for the campaign could start immediately, in tandem with the first reform step, and be used to build consensus on the further reform steps.

[22] Coady et al. (2012) provides additional information as to how to set up an effective public information campaign.

- This campaign should inform the potential beneficiaries (consumers and taxpayers) about the drawbacks of existing fuel product subsidies and the benefits of reform. It can also help if the messages are reinforced by independent analysts, e.g., via well publicized workshops run by policy think tanks. Such a campaign should highlight the following.

- Fuel subsidies have a high fiscal cost and crowd-out financing for priority public expenditures such as investments in education, health, and physical infrastructure. It is important that the full extent of subsidies is transparently recorded in the budget.

- These subsidies promote cross-border smuggling, shortages, black market activities, and corruption.

- Higher income groups capture most of the benefits from fuel subsidies because they consume more fuel products.

- Although international price movements are outside the control of the government, an automatic pricing formula with smoothing will protect the population from large swings in retail prices while simultaneously protecting the budget (and associated priority spending) from escalating subsidies and high inflation. Domestic price increases in the end reflect international price movements, which are out of the control of the government. Transparently publishing the key parameters of the formula can help to reinforce this perception.

- Passing through price increases will encourage greater energy efficiency, which in turn will help to reduce the adverse macroeconomic impact of international price volatility on the country through reduced availability of foreign exchange and the balance of payments.

36. **Appropriate packaging and timing of measures to ease the social impact of pricing reforms can also help to reinforce public support.**

- Price adjustments to reduce revenue losses should be explicitly linked to specific public expenditure increases. It should be made clear that price adjustments are necessary to protect planned expenditure increases and finance additional expenditures. These expenditures should include both those that benefit the population more broadly (e.g., education, health and public infrastructure) as well as safety net expenditures to protect the most vulnerable.

- Emphasizing the gradual adjustment of prices for more socially sensitive fuel products (kerosene) can also reinforce public support. Increasing taxes or decreasing subsidies for some less socially sensitive products (such as gasoline) can help to finance any short-term fiscal loss from gradual adjustment.

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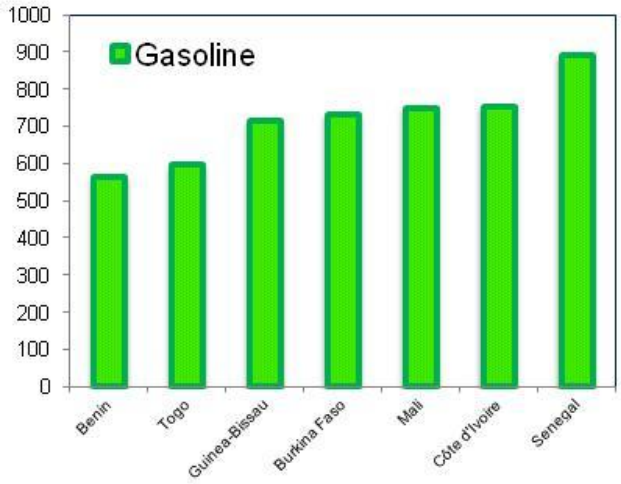
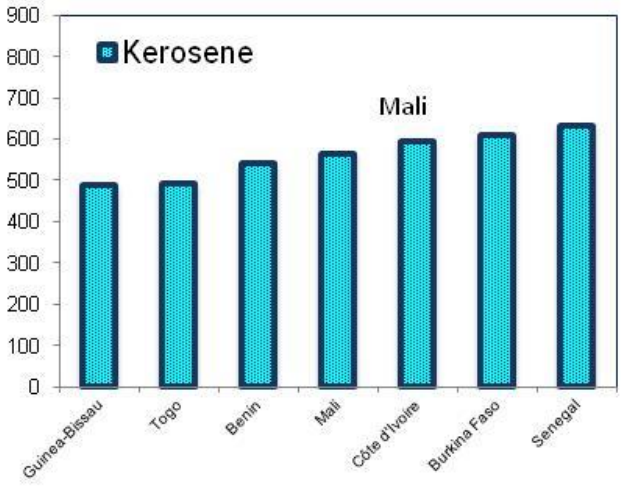
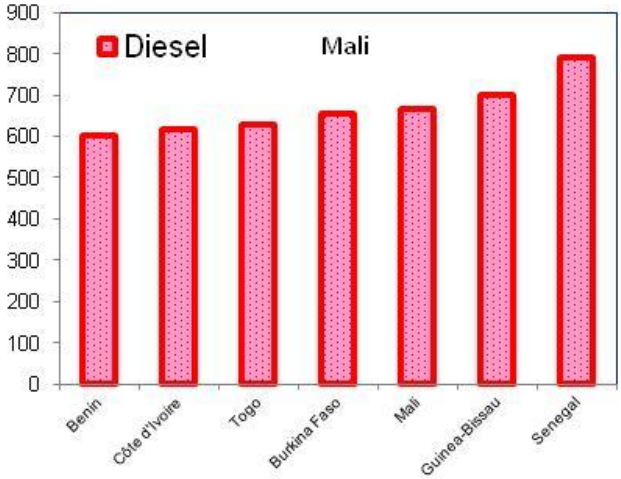
Annex 1. Fuel Prices in WAEMU Countries, June 2013

(CFA per liter)







Source: IMF.

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